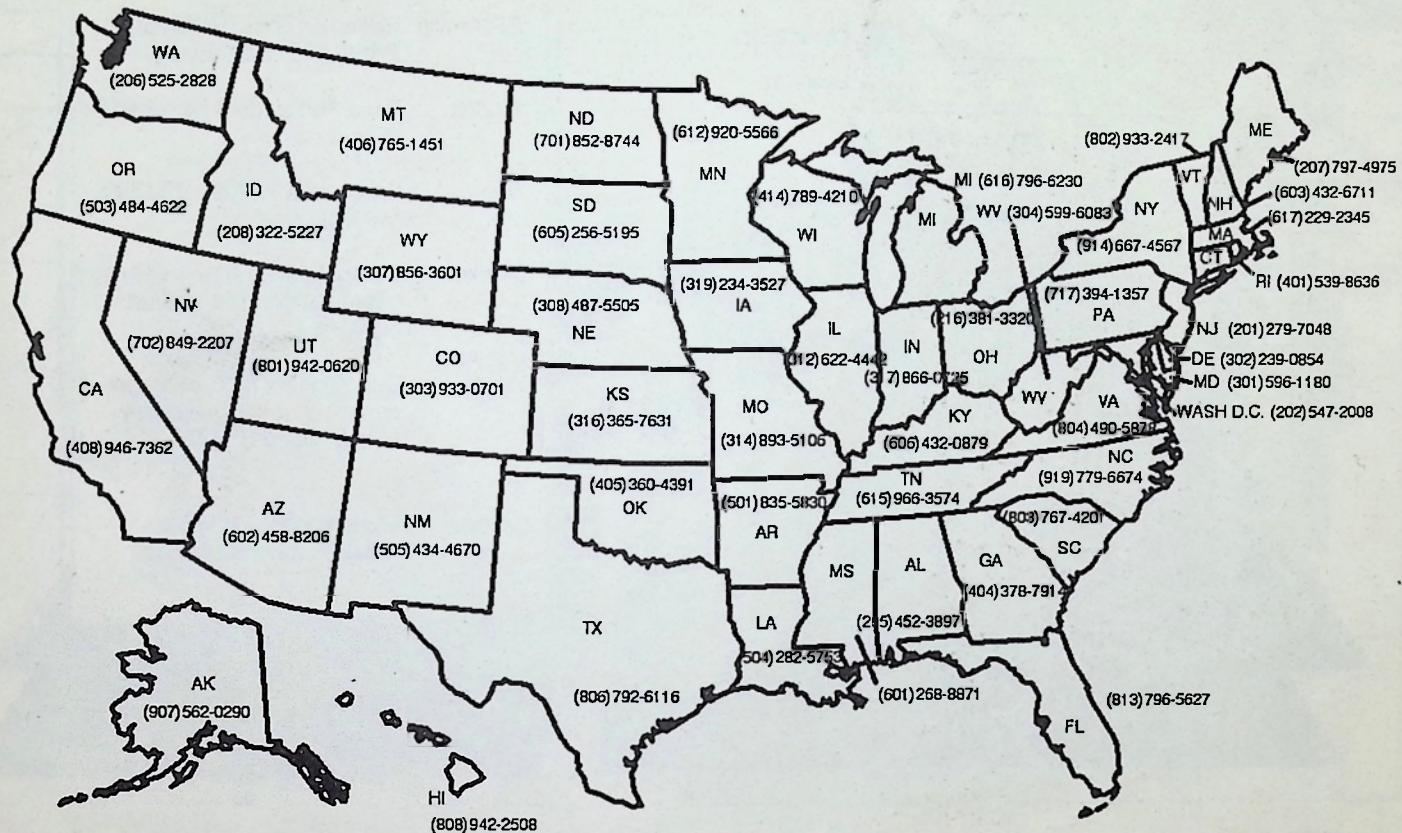


**July, 1990**

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# BOARDWATCH MAGAZINE

## **ELECTRONIC BBS AND ON-LINE INFORMATION SERVICES**



# **NIFTY 50 BBS CONTEST**

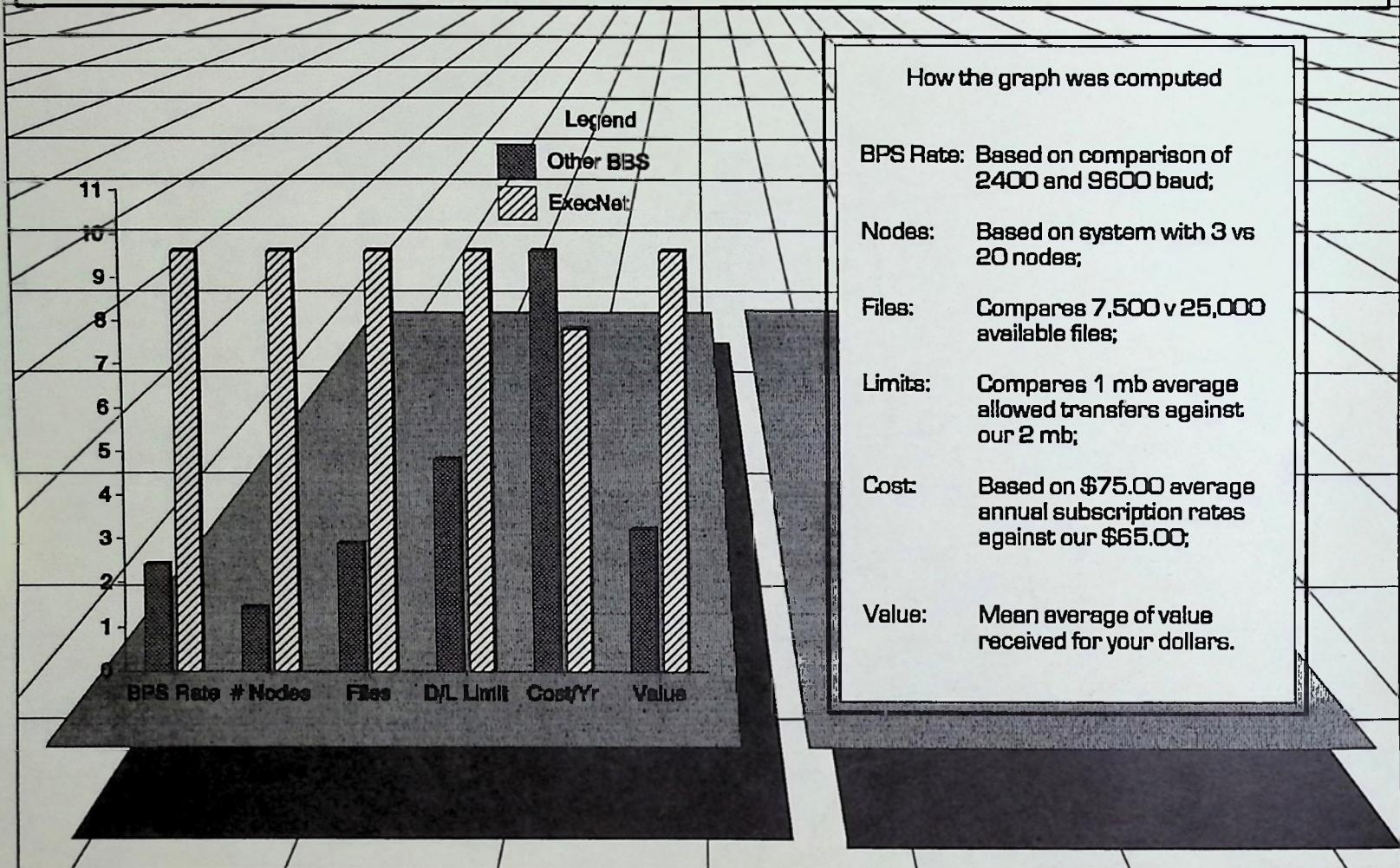
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# BOARDWATCH MAGAZINE

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## BOARDWATCH MAGAZINE

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## EDITOR'S NOTES

A number of good things have happened here at Boardwatch. We are apparently proving unnaturally attractive on the newsstand nationally. Given our admittedly gruesome format, this is a bit of a surprise. As of late May, the expected summer doldrums haven't really materialized.

All of this is pleasant of course. But format, subscription levels, and newsstand sales still aren't quite our first love. BBS systems and the shareware community are. And we have some good things happening there.

Last month, recall David Hakala's article on Dr. File Finder - Mike Callahan of Elizabeth Colorado. As it turns out, Mr. Callahan really is a quite remarkable individual. He actually was a physician, forced from the field by a series of 11 strokes initiated by an attack of food poisoning. Sporting a photographic memory and an absolutely keen mind even after the attacks, he really has been the Johnny Appleseed of Shareware, although he swears it's been better to him than the converse. He is nearing completion of his first book "Dr. File Finder's Guide to Shareware" which we eagerly await. A must read from the galley's we've seen.

Osborne McGraw-Hill is rumored to be so enamored of his clear writing style and professional work that they've signed him for a series of four books on the topic and are marking the first Volume I.

Best of all, Mike has agreed to grace our ragged pages with a column on shareware. We can think of no one in the world better qualified to do so. His first column appears on page x providing a bit of background on the history of spreadsheet programs and describing a couple of our favorites from the shareware community.

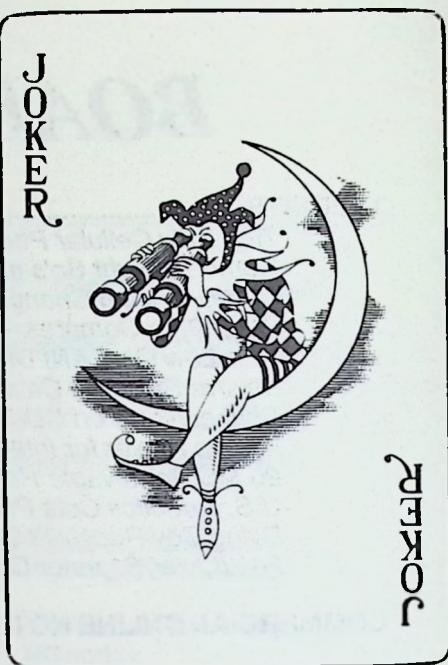
John Dvorak and Nick Anis also collaborated to deliver a column updating some developments of note to the online community. Our months of shameless, squalid begging paid off pretty handsomely for our readers there we

think. Both gentlemen have been pretty busy lately but did manage to squeeze in an afternoon at Dvorak's shed to hammer out a hotly contested article on what's what for us. The troublesome twosome are also up to it again with another monstrously large Dvorak book - this time on DOS and how to manage your machine. We could certainly use it. Our own hard disk drives and sock drawers all start to look the same. Probably genetic.

Some days you get the bear. Some days the bear gets you. Our participation in the HOT100/NIFTY50 contest would clearly fall under the latter. An excellent idea - poorly executed. That's the trouble with ideas. Everyone has them and often they are good. But individuals willing to work the long dark hours in that bleak period that always comes in the middle of turning them into reality are few and far between. And if the final result isn't quite what you had planned, claim success anyway - right?

Well maybe. But it's not our style. We've spent about 100 hours dialing 101 systems and formatting the results into something moderately usable. You will probably see at least seven different versions of "the list" floating about BBS land in electronic form. The list here presented is our very best guess given the conflicts between the "final" final list we received and our actual data gathered from the systems themselves. We hope you find it usable. And we hope the very deserving operators of these systems find the inclusion enhances their own efforts to run the best systems they can. Our full mea culpa begins on page x.

Boardwatch continues to evolve - as it must. The industry it covers does. And if we sound a bit snipish at times it is simple impatience and frustration. We see a land and its economy convulsing to birth a new form of economics and industry. In our perhaps grandiose vision, the entire development of computing machinery to this point is but a minor prelude to a coming explosion set off by the marriage of the still rapidly developing desktop computer and the also still rapidly developing telecommunications capabilities of an emerging global network. At that juncture lies an ignition point that will marry the boundless imagination and creativity of the human mind to virtually unlimited in-



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stantaneous access to the sum total of knowledge and information available on the planet. Against that background, which grows ever rosier under the influence of a couple of Bombay Gins, a thirty-item totally pointless personal logon questionnaire from a system catering solely to uncircumcised gay males brings us back down to earth and yes, just a bit cranky.

Hold to the vision....

Jack Rickard  
Editor

## TELEBITS

### TINY NEW CELLULAR PHONE

Gads. It had to happen and we like the way it is coming about. The world of cellular telephones has provided a jolly good time to many providers. The FCC set up competing "duopolies" in each area with the local Bell licensed to offer cellular and one other "competing" service. The "competition" hasn't really materialized and cellular has proven much more popular than first thought. The result has been that some cellular providers have enjoyed 50-70% margins while dropping prices less than 20% since the industry began. And all are rather jealously guarding their

golden turf. Anytime you operate a business with that kind of margin along with the technical limitations of the current cellular technology, you provide an open door to somebody with a better idea. And the entire cellular gravy train may be headed for a spill. Cellular subscribers will be the beneficiaries.

The FCC just opened the door to a new generation of smaller, lighter, cheaper mobile telephones that will allow thousands of times greater density of callers per square mile. In early May, the FCC authorized testing of the new phones in Orlando Florida and Houston Texas by granting Millicom Inc. the first two experimental licenses for Personal Communications Network (PCN) operation in the U.S. The FCC selected these two cities because they both have an already high concentration of microwave signals and will serve as a good test of interference with the new system. Millicom is already part of the Microtel Communications Limited consortium led by British Aerospace Plc implementing one of three PCN licenses in the UK.

Millicom Inc. has committed \$20 million over the next two years toward the two pilot programs. The service, termed Personal Communications Network (PCN) uses a five ounce hand-held phone set resembling nothing so much as a television remote control unit with a credit card slot. The set is 2 inches wide, 5 inches long, and an inch thick. The PCN concept is that telephone numbers are assigned to PEOPLE rather than to RJ-11 wall jacks. You carry your telephone identity on a credit card. While you can plug it into your wallet sized telephone, you could just as easily plug it into a PCN telephone anywhere and take calls there just as easily.

PCN is unique in that while it does of course interface with the current public switched telephone network, it can also originate and terminate telephone calls entirely within its service network in competition with traditional wireline telephone companies. This may be the first serious competition to local Bell telephone companies for local service and simultaneously the first competition to the cellular duopolies set up by the FCC.

According to Millicom's Chairman and CEO, J. Shelby Bryan, "These PCN test licenses provide Millicom the unique opportunity to construct the U.S. PCN networks and herald a new age of telecommunications in the U.S. where the individual is independent of telephone lines. We are eager to meet the challenge afforded us by these experimental licenses."

Millicom has requested the FCC to set aside spectrum in the 1850-1990 MHz band for spread spectrum transmissions. The technology is termed Code Division Multiple Access (CDMA) and is essentially a spread spectrum transmission technique using coded data packets addressed to called parties. Basically, the transmitted signal is "spread" over a fairly wide frequency range rather than focused on a single conventional frequency channel.

This offers several overpowering advantages over conventional cellular technologies. For one thing, it is less sensitive to blockage caused by hills, buildings, etc. that can disrupt conventional cellular calls. The sound is actually clearer. And the "handoff" phenom-

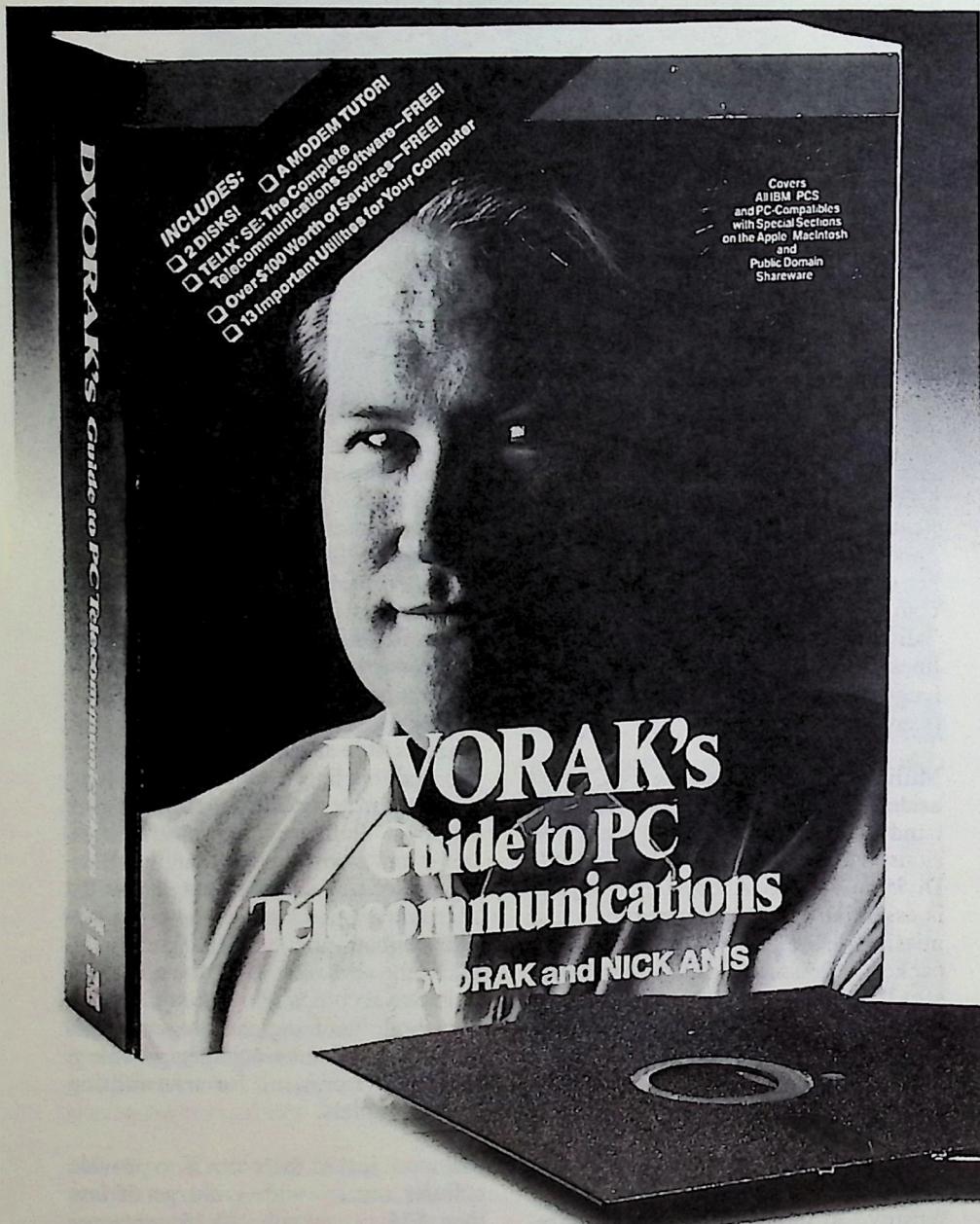


enon where a drop in signal is experienced as a subscriber moves from one cell to another is much less pronounced. Secondly, PCN can support more callers - as many as 2000 per microcell. Conventional cellular cells can support up to 832. Finally, it requires less power. Conventional cellular phones transmit one to three watts of power. Millicom claims PCN will make the same call using as little as one milliwatt of energy. We find this figure a bit hard to believe and they may have a typo in their promotional literature. But clearly it requires much lower power output allowing use of tiny batteries rather than the luggable ammo case used by many mobile cellular phones. This greatly reduces the size and cost of the telephone unit. See accompanying photo. PCN allows both incoming and outgoing calls of course and may actually provide a better environment for transmitting modem signals.

Millicom insists their aim is to provide cellular service with a charge of less than \$20 per month, 10-15 cents per minute, and with an equipment cost of less than \$100. With equipment costs spread over more users per cell, it's fea-

# Wise Guide.

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sible. If they can do it, the concept of mobile telecommunications will receive a big boost and many more will be able to afford it. This may be the cellular story of 1990. Andrea Vanraalte, Millicom, 411 Lafayette St., 4th floor, New York, NY 10003; (212)475-8200.

### RUMORS, MIGHT BE'S AND NUMBERS CAUGHT IN PASSING

Rumors, rumors. The end of the cold war? The Berlin Wall? Sure, that we can buy. But is peace about to break out across the amateur Fidonet network? Gorby is in Washington this week and that's not really news. But could it be true System Enhancement Associates' **Thom Henderson**, author of the SEA-dog mail program and ARC, was at the Denver area home of **Bob Hartman**, one of the principals on the BinkleyTerm mailer team, going hard after **BAR-BECUE** this past June 9th? What went on after dinner? Bocce ball and croquet? If this catches on, cooperation and conviviality could displace flames and animosity across the network. **THEN WHERE WOULD WE BE?** You can't run a network that way, can you?.

John Dvorak mentioned it in a recent column in PC Magazine. And we have confirmed that IBM continues to deny the rumor that they are changing their current marketing slogan for the PS/2 series from **PS/2 It! to PS/On It!** IBM does appear set on introducing another series of computers for the home. The new units are rumored to be slotless AT units with a price of around \$1000. Most notably, they will include a modem and software to connect to the Prodigy online service. IBM is one of the principle backers of Prodigy.

Not many details on this yet, but apparently there will be a new videotext service competing with Prodigy in 120 cities across the US. The new service is titled **TELEMAX**. In the Denver area, it will include the full text of the Rocky Mountain News newspaper online with online grocery shopping via all **SAFEWAY** grocery stores. Claims to be a much more responsive system than Prodigy. More details later.

Why doesn't some modem manufacturer make a pot full of cash on the coming Automatic Number Identification service now offered in nine states and coming soon to one near you. Add

the circuitry to modems. No display. Just a register in the modem that stores the number as soon as it is received when operating in answer mode. Communications or BBS software could pull the number with a simple AT command set extension. OR you might offer a register to contain an authorized telephone number. The modem would answer ONLY calls where the incoming ANI number matched the one stored in the register. Talk about a secure connection. Using ordinary public switched lines, two offices in a company could be linked where ONLY those two computers could talk to each other. Anyone else dialing in from another location gets a one ringey dingey, two ringey dingey forever. The security freaks out there in corporate America MIS land would wet themselves over that one. Super simple. Super cheap. And foolproof. And for the BBS world, BBS software vendors could incorporate software enhancements to read the registers at logon and display the calling number on screen and log it to the log file. It would take them about ten minutes to code it and another ten to get the word out. Processing the flood of upgrade orders could take weeks.

Do you consider yourself a cruciverbalist? Crossword puzzles are currently enjoying resurging popularity. And the premier widely available puzzle is of course the New York Times Crossword Puzzle. For many of us, some of the words are just a tad too obscure to figure out. If you are really at a crossroads and just have to get through it, there is a way to cheat. A **900** number offers solutions to up to three clues per call at **(900)884-CLUE**. You'll first be asked for the puzzle date. You must use a touch tone telephone to enter **A** for Across or **D** for Down followed by the clue number from the puzzle. A voice spells out the answer one letter at a time. Cost? Looks like a **\$1.75** per call.

Sprint and MCI have made some good inroads into AT&T's very strong residential market by offering nighttime/weekend rates during traditionally higher evening rate ours - **5:00 - 11:00 PM**. AT&T is responding by seeking permission from the FCC for a **\$160 million** dollar long distance rate cut. Approximately **\$100 million** of the cut would apply to direct-dial evening interstate calls. The cut would lower long distance bills an average of **2.5%**.

ATT is currently offering a free printed copy of their 800 directory. Dial **(800)237-6666** extension **61** to get yours. Well, almost free. There is a **\$5.00** shipping and handling fee.

The American Standard Code for Information Interchange (**ASCII**) is the lingua franca of the online world. Virtually all computers recognize this code to communicate basic alphabet, numbers, and punctuation across all computing platforms. While some of its origins trace to some codes developed by IBM in 1959, formal work on the code began in 1961 with the **ANSI X3** committee. The committee approved it in 1963 and President Johnson issued an order in 1964 establishing **ASCII** as the first federal Information Systems standard. Still seems to work.

Finally - PC Cards. Major software and hardware manufacturers in both the U.S. and Japan agreed in May on a standard for credit-card-sized solid-state memory devices, commonly termed PC Cards. The PC Memory Card International Association in conjunction with the Japan Electronics Industry Development Association, who represent 40 Japanese companies, came to terms on the common standard. Numerous devices have employed credit-card memory devices in the past including tiny laptops and laser printers. The cards were NOT interchangeable between devices and so never really caught on. PCMCIA specification covers static RAM, ROM, EEPROM, and flash RAM devices and causes the card to appear to DOS based machines as a floppy disk. Capacities of up to **10 MB** per card look likely. First hardware using the standard should appear at fall COMDEX.

### HAYES MAKING CHANGES

In our last issue we detailed the April 2 layoff massacre at Hayes Microcomputer products. The Hayes story continues to progress in some interesting ways.

First, it would seem that the layoff has had an unwelcome side effect for Hayes. Many of the retained employees, noting the sudden "out of the blue" layoff of their co-workers, were left a little shaken as well. Many immediately began casting about for positions of

their own before it came to be their turn in the barrel. The result? Hayes is now understaffed and advertising in the Atlanta area for several positions. Indeed, rumor has it the company is offering a cash "bounty" of up to \$500 to existing employees that bring in new-hires for certain hard to fill positions.

Hayes is also making an abrupt about face on mail order sales. In the past, Hayes has limited distribution of their high-speed products to "Advanced Systems Dealers". The rationale was that Hayes wanted their dealers to be able to provide top flight support for these products. Advanced Systems Dealers were required to undergo extensive requirements such as training programs, purchase of video training, a fifteen page questionnaire about their business, etc. to be authorized to sell 9600 bps modems. And they had to sell from an established retail storefront. The result? A limited number of authorized dealers who due to the lack of competition were able to hold street prices on these products pretty close to list price, and no mail order sales.

In a May 25 letter to dealers, company president Dennis Hayes announced they were discontinuing the Advanced System Dealer program. Further, all dealer support would be provided through the company's support bulletin board system at (800)874-2937. Where is this headed? Widespread mail-order availability of Hayes high-end modem products and a corresponding decrease in street price. An \$800 Hayes Ultra 9600 modem is not out of the question.

In fact, one by-product of the Hayes layoff was a growing support role for the Hayes BBS. Originally the brain-child of Randy Cooper and John Aitken of the technical/customer support group, the support BBS did not initially have the enthusiastic support of top management. With 2/3 of the support group employees wiped out in the lay-off, the support BBS is now filling a star role at the firm. Hayes is finally finding the advantage in its own technology.

And Hayes seems to be making some fairly dramatic changes in their relationship to the sysop community. At the Atlanta Comdex held the first week of June, Hayes, Mustang Software, and Magee Enterprises threw a sysop party on Tuesday night with about 70 opera-

tors from around the U.S. in attendance. The surprise speaker at the event? Dennis Hayes himself along with Toby Nixon, who holds the title Principle Engineer at the firm.

Dennis Hayes told the group a little about the history of the company and summed up by noting "You sysops are providing a valuable service, and one of the things I want to tell you is that the company did not forget about you... I honestly wish I had the time to be a sysop."

The immediate future of Hayes seems to be riding on their new Hayes Ultra 9600 model. The new model is compatible with the earlier V-Series 9600 models, but also includes V.32 and V.42/V.42bis features making it a much more universal machine. The company appears to be putting its money where its new found sentiments are. System operators can qualify for a substantial discount with the new Ultra model, just now shipping, available at \$599. Operators who purchased the previous V-Series 9600 modems can upgrade to the Ultra for \$200.

With U.S. Robotics growing more firmly entrenched in the sysop community each day, Hayes may have its work cut out convincing the sysop community of its new found religion. But among callers and the corporate world, Hayes is still very much the standard. With the right moves, the right price, and a bit of time, Hayes could make inroads in the BBS community. Hayes Microcomputer Products, Inc., 705 Westech Drive, Norcross, GA 30092; (404)449-8791

#### **DATA COMPRESSION CARD EXPANDS HARD DRIVE CAPACITY**

Over the past few years, many online computer aficionados have quite commonly used archival compression utility programs to compress data for transmission by modem, and to a large degree, even to store it on their hard drives. Drive real estate, while dropping in price, is still expensive. More recently, several programs have come on the market that will actually compress executable programs, expanding them automatically when you run them. System Enhancement Associates AXE program is one such example. Now InfoC-

hip Systems Inc has carried this a step further with a hardware device that compresses data on the fly.

The InfoChip Expanz is a \$199 eight-bit half-length co-processor card that compresses all data before writing to the hard drive and uncompresses all data coming off the hard drive. According to the company, this compress/expand cycle is done so quickly in hardware, it will not slow your access to the stored data. The average compression ration is 2.5 to 1.

The result is that your 20 MB drive will hold 50 MB of data while a 100 MB drive will hold 250 MB. The card can compress data much faster than a disk can read or write it. Since the resulting data is stored on fewer sectors, disk read time actually becomes quite a bit faster. This performance improvement window more than makes up for the time required to perform the compression/uncompression.

The BBS community has always experimented heavily to increase the storage capacities of hard drives. Run-Length-Limited encoding has been the standard option and a variation on that them is used by Perstor in their popular hard disk controller card series. The problem with such technologies is that they try to stack more data on the same physical area of magnetic media on the disk surface. Perstor actually stores 31 512-byte sectors in the same physical space as 17 512-byte sectors on a normal drive. This is 15872 bytes on a surface designed to contain 8704 bytes. Error correction algorithms attempt to alleviate the inevitable data problems that occur. Unfortunately, these algorithms are not entirely successful. As a result, RLL technologies are simply not as dependable as standard Modified Frequency Modulation (MFM) storage. And disk drives, even of the MFM persuasion, are inherently unreliable devices. The limitations of the magnetic media are pretty much a physical property.

This Expanz card takes a different approach. It compresses data mathematically BEFORE it is written to the drive surface. The surface itself supports exactly the same data density as before. Modem manufacturers use hardware compression virtually error free as do the compression utility software pro-

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grams. We have not tested Expanz as yet, but the concept holds inarguable promise.

InfoChip Systems, Inc. 2840 San Tomas Expressway, Santa Clara, CA 95051; (408)727-0514.

#### FIRST LOW COST ANI DEVICE FOR PCs

Automatic Number Identification (ANI) has received a lot of attention. The service is currently available in nine states and is actually one of the Customized Local Area Special Services (CLASS) offered with a new switch software system titled Signaling System 7 (SS7) currently being installed in many areas. There is some

controversy over the service but ANI is the most talked about feature of CLASS.

Rochelle Communications has introduced a reasonably priced hardware/software combination for PC owners who live in areas that have ANI. The hardware device is a two-inch cube that plugs into the COM1 or COM2 serial port on the computer. An RJ-11 modular telephone jack allows you to

plug it into your telephone line in parallel with your telephone set. A 30 KB Terminate-and-Stay-Resident (TSR) program runs in background to monitor the port and retrieve the incoming callers telephone number.

The software is actually designed to operate in conjunction with a dBASE III+ compatible database program. When you receive a call, the software searches your database for a match with the telephone number of the calling party. If it finds one, it pops up the dBASE file record on the caller along with a notes window and a call history window. The package is priced at \$185. Rochelle Communications Inc., 8716 North Mopac, Suite 200, Austin, TX 78759; (512)794-0088.

#### BIZARRE CATALOG

We recently received a catalog in the mail. Not too unusual in itself. But this little catalog is worth a mention simply because it is the most bizarre example of mail order merchandising we've ever seen.

The catalog is a ragged little pulp tabloid style publication titled *John's Picks* from Microcomputer Applications in Suisun City CA. John is John Zarrella. As a software developer over the past ten years, John has amassed a collection of little items he likes. Now he sells them using this catalog. And the collection is bizarre. Software and lots of it. But it's weird software. Lots of fractal programs and a whole slew of programs dealing with chaos science and attractors. This is a kind of search for patterns in utterly random data. They also offer lots of coffee mugs with little imprints like IT'S 11:55 - DO YOU KNOW WHERE YOUR LUNCH IS and JUST SAY NO TO JERKS - YOU CAN'T FIGHT STUPIDITY and HARD WORK NEVER KILLED ANYBODY - BUT WHY TAKE A CHANCE.

He also offers 12 feet of Escher. This is a series of 15 posters from artist M.C. Escher. Escher is the guy who draws things inside out and upside down - weird staircases you have to climb to the top to reach the bottom, Möbius strips, etc.

A lot of the software/book combinations have a math/physics theme. We called to find out how he got started etc. The gent on the other end, a notably rude and stupid lout (not John), enthusiastically described a calculus learning system titled **THE MATH PROGRAM** developed by an unknown couple in Illinois. Apparently John has added a software program and videotapes and is marketing the package as **KILLER CALCULUS** at \$119. They claim 7 year-olds are actually learning calculus with this package. I told him it sounded interesting and I'd like to take a look at a review copy. He told me in pretty graphic terms to go pound sand. Not a classic marketing technique but admirable on its own twisted terms.

The catalog is jammed with other oddities. An electrostatic kit demonstrates how photocopiers work. A compact disk music album of hammered dulcimer music John likes. Puzzles. Geometry for programmers. A paper airplane kit. A book of odd questions like **WHAT KIND OF SHELLS DO CASHEWS COME IN**.

This eclectic catalog is fun reading, offers a lot of things you'll never see advertised, and is generally of interest to anyone with a science, math, or programming bent. We don't know if any of it is actually any good but the catalog is fun to read. Microcomputer Applications, PO Box 1583, Suisun City, CA 94585; (707)422-1465 voice.

#### SHAKESPEARE ON CD-ROM

CMC Research is marketing a CD-ROM disk containing the complete works of William Shakespeare, including 37 plays, and 154 sonnets in both Queen's English and American English. The library is priced at \$99. CMC Research, Inc., 7150 Southwest Hampton, Suite C-120, Portland, OR 97223; (503)639-3395.

#### LAPTOP POWER FOR INTERNATIONAL TRAVELERS

Traveling overseas can be an adventure for the computer equipped. Many countries offer voltages from 110VAC to 240VAC - or something in between. And a number of areas use entirely different wall plug conventions than those in the US. lapAdapt Electronics has in-

troduced a competent package allowing laptop owners to plug in to a variety of power sources.

The grounded plug adapter converts 110-240VAC to work with any American laptop AC adapter. The unit includes a variety of plug adapters to connect to electrical outlets in the UK and many other countries. The price is right at \$49.95. lapAdapt Electronics, 169 11th St., POB 611, Hoboken, NJ 07030; (201)798-3030.

#### 20 MB REMOVABLE HARD DISK FOR LAPTOPS

Disk Technologies Corporation has introduced a fascinating add-on for laptop computers at a very attractive price. The **Disctec RHD 20** is a seven-ounce, 20 MB hard drive for laptop computers. The device features a **REMOVABLE** hard drive element the size of a package of playing cards. Users can replace existing 3.5-inch floppy drives with the unit which measures 3.2 by 5 inches and is 0.80 inches tall. It does require an IDE controller on the laptop. The unit has been tested on Compaq, Toshiba, and Zenith laptops successfully.

Essentially, you can not only add a hard drive to your laptop, but the removable cartridges allow you to swap data between laptops or laptops and desktops similarly equipped with the "docking units" that accept the media cartridge.

As to performance, the tiny drive offers 23 ms access time and 5 megabit transfer rate. The kit with drive, cable, software driver, and mounting hardware is \$695. Extra media elements are \$595 while additional docking units are \$95. Disk Technologies Corp., 917 N. Pennsylvania Ave., Winter Park, FL 32789; (407)645-0001.

#### U.S. ROBOTICS CUTS PRICES

U.S. Robotics announced it was cutting prices during the first week in June. According to executive vice president Jonathan Zakin, "Reduced costs of V.32 components in particular and the market acceptance of high-end modems in general have enabled us to cut prices."

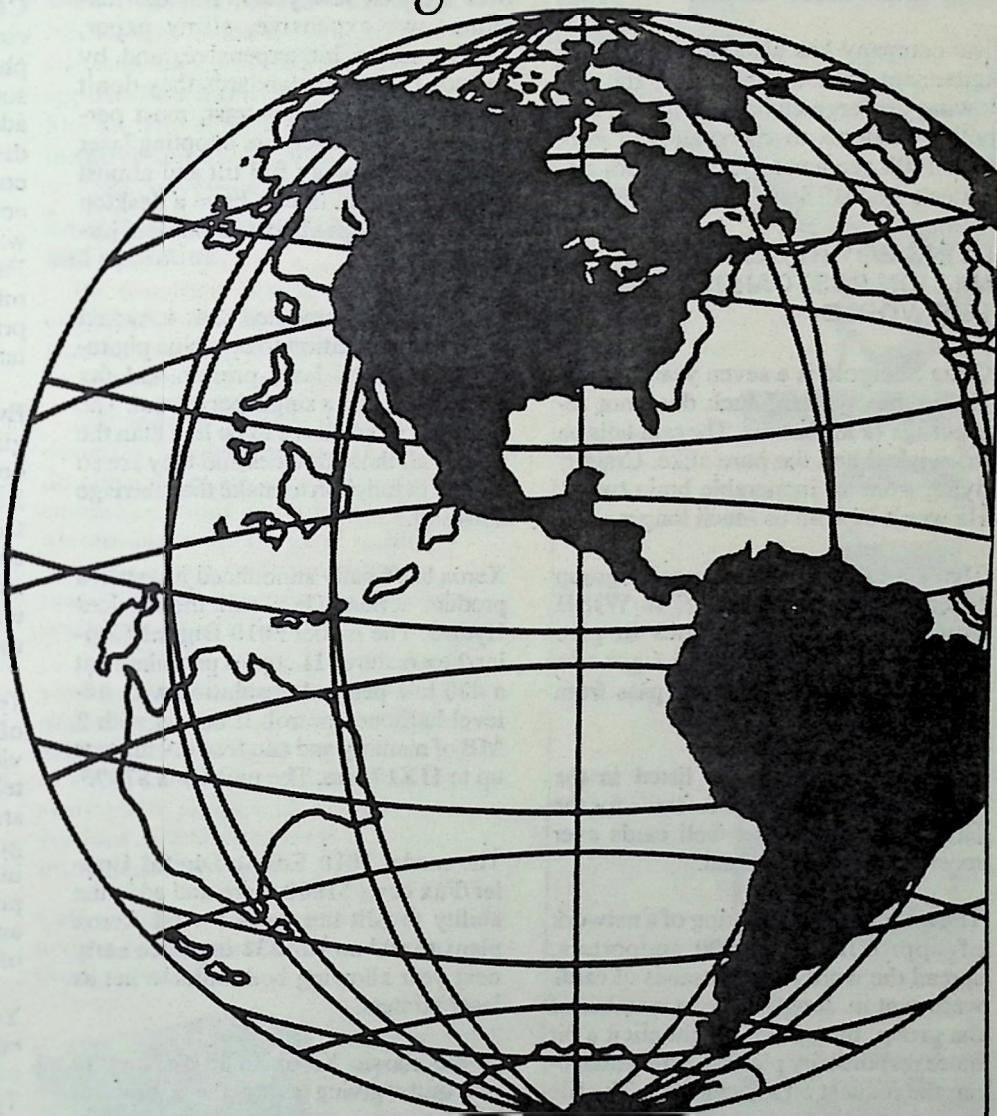
The Courier HST Dual Standard, darling of the BBS world with its 14.4 kbps HST connect and V.32 compatibility at

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9600 bps has been cut from a list price of \$1595 to a new suggested retail price of \$1295 - an 18.8% cut.

Similarly, the Courier V.32 and Courier 2400e were cut from \$1099 to \$995 and from \$699 to \$599 respectively.

All models in the Courier line, with the exception of the 2400e model, are fully V.42/V.42bis compliant and continue to support MNP levels 1-5. The V.42/V.42bis feature will be added to the Courier 2400e this fall.

The company has also entered into an agreement with Businessland, Inc. allowing the large chain to sell U.S. Robotics Modems to corporate and Fortune 1000 accounts. U.S. Robotics operates a free BBS at (708)982-5092.

#### **DYING BOY RECEIVES 9 MILLION POSTCARDS FROM BBS WORLD**

Craig Shergold is a seven year old boy. Unfortunately, hard luck does not respect age or innocence. The rain falls on the wicked and the pure alike. Craig is dying from an inoperable brain tumor. He won't be with us much longer.

That's a hard thing to accept. A group titled **Children's MAKE A WISH Foundation** in Atlanta tries to give young terminally ill patients a gift of a wish come true before they pass from this world.

Craig's wish was to be listed in the Guiness Book of World Records for the largest number of get-well cards ever received by an individual.

The foundation, consisting of a network of approximately 6000 supporters, spread the word and thousands of cards were sent in. Jere Greene, a member of the group, thought he might elicit a bit more response by placing a file describing the request on a local BBS. The file spread, as files are wont to do BBSland.

No happy ending here. Craig is still with us, but it would appear not for long. And he did receive his wish. He's to be listed in the 1991 Edition of Guiness, as a result of the **NINE MILLION** get well cards received as a result of this quiet online campaign.

The Children's Make A Wish Foundation asks us to pass along their thanks to the online community. So passed. If you would like to send Craig a card, Craig Shergold, c/o Children's MAKE A WISH Foundation, 32 Perimeter Center, East, Atlanta, GA 30346; (404)393-9474.

#### **FAX/LASER/SCANNER COMBINATION**

Fax machines have swept the country over the past few years. But the machines use expensive, slimy paper, they're still a bit expensive, and by desktop computer standards they don't do very much. By contrast, most personal computer users are adopting laser printing technology full tilt and almost everyone would like to have a desktop scanner although almost no one can justify the price.

Many have commented that it would seem a nice addition to combine photocopier, scanner, laser printer, and fax capabilities into a single peripheral. The total cost would have to be less than the sum of all those devices and they are so related in function to make the marriage a natural.

Xerox has finally announced just such a product series. They call the devices Hydras. The model 3010 Digital Copier/Fax features 11 copies per minute at a 400 line-per-inch resolution with 64-level halftone control. It comes with 2 MB of memory and can feed documents up to 11X17 size. The unit costs \$7995.

The model 3010 Editor Digital Copier/Fax costs \$1000 more and adds the ability to edit the images. And Xerox plans to add an RS-232 interface early next year allowing both units to act as laser printers.

In the classic Xerox tradition, they're not quite giving away these units at eight grand a pop, but the resolution, speed, and function offered by the Hydra line make it a contender for the up-scale office environment. Xerox Corporation, Xerox Square, Rochester, NY 14644; (800)832-6979.

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## **COMMERCIAL ONLINE NOTES**

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#### **PHONE/ADDRESS LOOKUP DIRECTORY**

Automatic Number Identification (ANI) is coming. The service, already available in nine states, is one item of CLASS (Customized Local Area Special Services) that transmits the telephone number of the calling party as soon as the telephone rings. A special adapter, usually available for about \$60, displays the number. It is not without controversy. A Pennsylvania appeals court ruled last month that the service was a breach of state wiretapping laws. Further, a U.S. Congressional subcommittee began hearings this month on the privacy issue with an eye toward legislation.

Even if ANI survives legislative mangling, the question remains what do you do with the number once you have it? No other information is transmitted, just the telephone number. BBS system operators typically require the telephone number and mailing address as prerequisite for system use. ANI will allow them to verify telephone numbers.

Telematch, a division of Times Journal, offers an online reverse matching service. The service allows you to enter a telephone number and receive name, street address, city, state, zip, and demographic data on over **70 million** people in the U.S. It isn't cheap, and in fact the pricing isn't even rational, but it is fast, and it can produce a "hit" about 40-60% of the time.

You can dial it from any modem-equipped PC using virtually any terminal program and it's accessed via Tymnet. There is a one-time setup charge of \$125, a \$25 per month service charge and a bizarre series of connect time charges. But they're like nothing we ever heard of. The basic connect charge is \$0.25 per minute. But there is a thirty minute minimum use for each day you actually logon. If you don't use the service all day, no charges. Use it at all, and you might as well be on for 30 minutes - you'll see at least a \$7.50 charge. Lee Starkey, Marketing Rep for

**Think about multiuser dBASE applications without the hassle of networks or multitaskers. Think about the possibilities provided by secure remote access.**

The Bread Board System (*tbbs*) Information Manager allows up to 32 simultaneous users on a single CPU using only DOS. No LAN or multitasker. *tbbs* provides an easily customized and managed multiuser communications oriented application platform. Now The Data Base System (*tdbs*) dBASE compiler and expansion module adds dBASE language capability to *tbbs*.

#### **Easy and reliable multiuser communications.**

*tbbs* transparently adds communications to your *tdbs* programs. It allows any mixture of local terminals, remote modems, data PBX or X.25 PAD connections. Acting as a front end for your *tdbs* dBASE language applications *tbbs* handles switched connections, modems, security, and authorization tasks for you.

#### **Easiest multiuser programming with Transparent File Sharing.**

The demand scheduled *tbbs* environment allows *tdbs* to provide Transparent File Sharing. This means that record and file locking are not required, so all fields in all records may be shared at all times! You can even share fields between programs and screens will instantly reflect any changes! Records are always available to all users improving transaction response times.

When any *tdbs* program changes a field in any record, the next reference to that field by any program will receive the new value. Any program using an index file based on the changed field is also transparently positioned to reflect the new value as well—without special programming.

#### **Custom template construction and access control.**

*tbbs* and *tdbs* also allow you to integrate your dBASE applications with "bulletin board" functions such as electronic mail and protocol file transfer. The template menu system allows you to build exactly the access structure you wish.

You can build full custom electronic information systems with dBASE programs integrated into the menus.

The *tbbs* "Lock and Key" security and authorization system is available to your *tdbs* program. Programs can vary access and operation based on user or group authorization.

#### **File and source compatibility.**

*tdbs* provides 100% compatibility with dBASE .DBF and .NDX files. No file conversion is required to use the same files with *tdbs* and dBASE applications interchangeably. Source files are also compatible with the industry standard dBASE language so code conversion is minimal.

#### **Easy installation, maintenance, and operation.**

Because there is only one CPU, and only DOS is required, you can spend time developing applications not keeping existing ones operating.

*tbbs* and *tdbs* provide extremely rapid design to implementation time and do not require advanced expertise in communications or multiuser programming to obtain good results. You can have a multiuser system installed and operating the same day you receive the software!

*tbbs* and *tdbs* allow up to 32 users with only DOS. No Networks or multitaskers! 16 user *tbbs* \$895, *tdbs* (dBASE compiler and expansion module) for 16 users \$995. Also available in single and 32 user versions. Available now for immediate delivery.

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the service, avows that this is all Tymnet's doing. Since we've covered hundreds of services that use Tymnet and have never heard of a daily minimum or minimum connect, we have to assume we're having smoke blown up our skirt on this one. There is also a \$0.25 per record charge for successful searches if you want just name, address, and telephone number. If you also want demographic data, it carries an additional \$0.25 charge.

This is a good example of outsmarting yourselves with your own product. Telematch has a valuable database we would gladly pay to access under certain situations. But the high initial gate, and the bizarre pricing combinations just to look up a single record on a very simple, if immense database, is going to cripple its success in an area where it should be very popular. In our unqualified by strongly held opinion, if you can't explain your pricing in 25 words or less, you've priced wrong or you don't understand your product.

This service would be a natural for a 900 dial-up service. Call the number, look up an address, and pay the telephone company 75 cents or a buck a minute to do it. Look up a single number or stay on all day and run as many as you like. It would be a hit. Telematch, 6883 Commercial Drive, Springfield, VA 22159; (800)523-7346.

#### COMPUSERVE FEATURES CLASSIFIED ADS

In a June 1 release, CompuServe Information Service announced addition of classified advertising online. Members can post classified ads electronically under a variety of headings such as employment, travel, real estate, professional services, and personal computer hardware and software. The listings are searchable.

The cost of placing an ad is \$1.00 per line per week or \$1.50 per line per two weeks. CompuServe claims 565,000 members. To read the classified ads, callers will still incur the \$12.50 per hour connect time charge - and so actual readership of any particular ad remains a dubious proposition. In the past, CompuServe has been neurotically fascist about any mention of products it doesn't make a direct buck on - to the point of deleting any message MEN-

TIONING another service of any kind. It will be interesting to see what survives their ever censoring eye in this classifieds section. **GO CLASSIFIEDS.**

Recent rumors indicate the service has actually suffered a 10% loss of membership over the past six months. Recall that CompuServe bought the entire 55,000 membership of The Source in August 89. It may well be that many of The Source's membership simply didn't "stick" through the conversion and the rumored loss may not be statistically significant. The service also mails out a monthly printed magazine to members. In the past, such magazines, and CompuServe's was no exception, tended to be self serving little tout sheets devoid of anything worth reading. CompuServe has obviously invested some resources into their current print publication and we're impressed. Still heavy on touting CompuServe naturally, but it's bigger, graphically more impressive, and it's starting to include the odd bit of useful information. And what's this - could it be humor? Have another look at this rag. CompuServe Information Service, 5000 Arlington Centre Boulevard, POB 20212, Columbus, OH 43220; (617)457-8600.

#### FREE VIDEOTEXT FOR PC VIA CABLE TV

In our August 1988 issue, we did a story on **X\*PRESS** Information Services Ltd. and it probably bears a revisit. The service provides a 24 hour continuous loop of news text via your existing cable TV service. To put it on your PC screen, essentially all you have to do is know it's there.

In June 1988, McGraw-Hill and TCI Cablevision joined forces to form **X\*PRESS** Information Services Ltd. TCI Cablevision is probably the largest cable television company in the country. Roughly 22% of all cable hookups in the United States are owned directly or indirectly by this company. A little over a year ago, TCI bought McGraw-Hill's interest in **X\*PRESS** and they operate it themselves today.

The company actually provides two services - **X\*PRESS X\*CHANGE** and **X\*PRESS EXecutive**. The **X\*CHANGE** service is transmitted at no additional charge over the cable of

550 cable TV sites throughout the United States and Canada. It is available at no additional charge in 16.5 million households - but most don't even know it's there.

Essentially, **X\*PRESS** gathers the information via live feeds from a variety of sources and combines it all into the transmitted information series from a VAX MICRO II Computer. The output is transmitted via an uplink facility in Greenwood Village Colorado to the Galaxy I Transponder VII (G1-7) satellite as a sideband carrier of the Cable News Network (CNN) transmission. Cable TV head-ends at 550 locations throughout North America receive the relayed transmission and convert the data into a modulated FM subcarrier to transmit over the cable. In the Denver area this subcarrier operates at 72.6 MHz. At the home end an ordinary cable splitter routes the signal to an FM demodulator required to convert the FM transmission into a 9600 bps RS-232 format. This is connected to the serial port (COM1/COM2) on your computer. **X\*PRESS** provides an FM demodulator kit that includes software, the demodulator, a cable splitter, and some coaxial cable for \$99.95. The kit is available for Apple IIe, IIc, and all Macintosh models, the Atari ST series, Commodore Amiga, all IBM compatible units.

**X\*CHANGE** provides a wealth of information over cable in a continuously repeating loop of data updating every 30 to 45 minutes. News services include those as common as the Associated Press Newswire and Knight Ridder Financial Information, and as exotic as TASS news agency from the USSR, Agence France Presse, CNN News Headlines, Canadian Press, Xinhua News Agency in the People's Republic of China, Kyodo News Service of Japan, Deutsche Presse Agentur of West Germany, and the OPEC News Agency. The Notimex news service from Mexico City is received in Spanish.

The service also provides weather information, sports updates, and a special technical section with articles from Copley News Service and Byte Magazine on personal computing technology. At the demonstration we viewed at the company's location in Englewood, we found this service alone was extensive and captivating. An on-line TV guide

details scheduling for major networks and cable services such as WTBS, CNN, etc. A Washington Post Writers group features columns by writers such as George Will.

Recently, X\*PRESS began distribution of shareware software - mostly educational programs. In fact, X\*PRESS is currently used in 3000 classrooms across the United States and provides learning materials, lesson plans, educational software, and support materials for the CNN News TV Channel now available in classrooms nationwide.

The service actually transmits data in a continuous loop. Software running on your PC monitors the data and retrieves and stores all or part of it according to your selections. Keyword searches are the main advantage of this method although the data can also be viewed "real time". It continuously receives, monitors, and collects the stream of information and can be tailored to select specific items or even news by a configurable file of keywords. The user selects items from a menu for viewing and generally they are available immediately. Some items require a short wait that can vary. Software also allows up to 128 individual stocks to be tracked. Quotes are snagged from the stream that transmits at market opening, mid-day, and close, and held for viewing later.

The X\*PRESS EXecutive service is geared more toward the serious investor and includes everything in the X\*CHANGE service. Additionally, the S&P stock quotes are provided on a 15-minute delay from market and updates continuously rather than three times daily. With the inherent 15 minute transmission delay, you could wait as long as 30 minutes after a market transaction before seeing the price. Effectively, quotes average 24 minutes from market according to the company. Additionally, the EXecutive service provides access to 35,000 ticker symbols vice the 2000 available on the basic X\*CHANGE service.

The EXecutive service also provides much more extensive financial news services than the basic X\*CHANGE service including BusinessWire, Invest/Net Group's Insider Trading Monitor, McGraw-Hill Inc. Business News, PR Newswire, and Standard & Poor's Corporation Market Movers, Market

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While X\*CHANGE is available at no charge, EXecutive costs \$19.95 monthly. The additional information is scrambled and a \$75 package including plug-in descrambler module and software upgrade must be added to the \$99.95 FM demodulator kit to receive the service. This totals an initial cost of \$175 plus \$19.95 monthly for a service that could effectively replace costly prime-time connect charges to Reuters or Dow Jones. Remember that X\*CHANGE and EXecutive are available to you for all or any part of the 24 hours we customarily allot to a day at the same flat rate.

How can these services be made available at such a low cost? According to Tomec Smith, VP of Marketing for X\*PRESS, cable TV is an inherently efficient transmission medium. Telephone companies are cut entirely out of the picture with all long distance transmission occurring via satellite. The X\*CHANGE service is actually pur-

chased by individual cable firms to enhance the value of the basic cable service. X\*PRESS gains most of its revenues from this and the FM demodulators are actually provided at or slightly below cost.

Interestingly, X\*PRESS even has provisions for those who own a satellite dish rather than cable TV. Essentially, you must have a Video Cypher 2 descrambler and at least a ten-foot dish is recommended. X\*PRESS charges \$189.90 for an access kit consisting of a General Instrument Info-Cypher unit, demodulator, cables, etc. A monthly charge of \$24.95 for EXecutive or \$5 monthly for X\*CHANGE is also required for TVRO. Effectively, you can retire deep into the heart of the high Rockies, mount a dish on the side of the mountain, and watch your stock portfolio swell in near real-time from the comfort of your patio for \$24.95 monthly.

Additionally, X\*PRESS seemed notably devoid of the usual aversion high-tech companies often have to the technically inclined user. In fact, X\*PRESS specifically courts developers. For \$25 and a non-disclosure agreement, you

can receive a software developer's handbook describing details of the transmitted data stream and how to decode it. If you do happen to produce an interesting product employing the transmission, X\*PRESS may have an interest in helping you market it.

The company already markets an add-on product for EXecutive subscribers titled Livewire with high/low alarms, moving averages, and some incredible trend line graph capabilities. The software provides a direct port of data to Lotus 123. The company appears to be interested in providing additional products.

Overall, we found the demonstration of X\*CHANGE and EXecutive overwhelming and enormously exciting in breadth, quality, and detail. For most PC users, an investment of \$99.95 brings access to an information service in many ways richer than any of the on-line commercial services such as CompuServe, The Source, and even Dow Jones News, and at essentially no charge. Your on-line commercial action can then be limited to interactive activities such as E-Mail which the one-way nature of X\*CHANGE does not support. For serious investors, the service brings 15 minute delayed quotes to your office 24 hours daily with business news for a notably attractive low monthly charge. Tomec Smith, VP of Marketing, X\*PRESS Information Services, Ltd., PO Box 4153, Englewood, CO 80155; (800)7PC-NEWS

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## SYSTEMS OF NOTE

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### SUPREME COURT DECISIONS ONLINE

This past May 11, the Supreme Court of the United States ended deliberations by announcing a decision to release the full text of all court decisions in electronic form to twelve different information oriented organizations selected to participate in an experimental plan.

The twelve were selected by the Courts Committee on the Electronic Dissemination of Opinions from twenty original applicants to participate in a two year

pilot project titled Project Hermes. The twelve include two wire services, four legal publishers, three online databases, one electronic information network, and two consortium of legal/news/education groups. The twelve will receive the text of all court issued rulings in electronic form within minutes of issuance from the bench beginning June 1, 1990. The organizations include:

- Associated Press (AP)
- Bureau of National Affairs
- Commerce Clearinghouse
- U.S. Department of Justice
- Mead Data Central
- National Clearinghouse for Legal Services
- Supreme Court Opinion Network (SCON)
- Thompson Group
- United Press International (UPI)
- UUNET Computer Services
- West Publishing
- Case Western Reserve University
- National Public Telecomputing Network Inter University Communications Council (EDUCOM).

Each participant will provide its own computer link to Hermes and pay an annual support and maintenance fee of \$500. The Supreme Court Opinion Network (SCON) loaned the on-site equipment to the court for the duration of the two-year pilot program.

Most notable in the announcement was not the expected bevy of legal publishers and commercial database vendors, but UUNET and Case Western Reserve University. UUNET is part of the national network of Unix-based machines that use the Unix to Unix Copy Program (UUCP) to network messages and files to thousands of systems. Internet, Arpanet, Bitnet, Usenet, and a flock of other Unix based nets will theoretically have virtually free access to the information. The actual UUNET Communications Services company acts as a gateway where any Unix system can access thousands of files and message areas via a 900 number access numbers. The Supreme Court opinions are available at (900)GOT-SCRS for 40 cents per minute. UUNET Communications, 3110 Fairview Park Dr., Suite 570, Falls Church VA 22042; (703)876-5050 voice.

More to the advantage of our readers is Case Western Reserve University's participation. Case Western is very progressive in the field of online communications. They are currently installing a 7000-node fiber optic system on campus. They have also experimented very successfully with community telecommunications through their popular CLEVELAND Free-Net online service operating at (216)368-3888.

For the past five years, Case Western Reserve University has been experimenting with free, open-access, community computer systems as a new communications and information medium. The University's involvement in the development of community computer systems has its origins in an experiment conducted in the School of Medicine in the fall of 1984. Dr. Tom Grundner, of the Department of Family Medicine, set up a single phone line, computerized, "Bulletin Board" system called "St. Silicon's Hospital and Information Dispensary" to test the efficacy of this medium as a means of delivering general health information to the public.

The heart of the system was an interactive area where lay people could call in using their home, school, or business computers, leave medically-related questions, and have them answered by a physician within 24 hours. The experiment proved so successful that it attracted the attention of the Information Systems Division of AT&T and the Ohio Bell Telephone Company, who supported a larger project to expand and develop the concept.

Based on these donations, Dr. Grundner began work on a full-scale "community computer system" on an AT&T 3B2/400 computer with 10 incoming phone lines. This pilot project was designed to serve as a community information resource in areas as diverse as law, medicine, education, arts, sciences, and government—including free electronic mail services for the citizens of northeast Ohio.

On July 16, 1986, this system, called the Cleveland Free-Net was opened by Ohio Governor Richard Celeste and Cleveland Mayor George Voinovich and the project was officially underway.

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"How important is the Exec-PC BBS? To borrow a line from a famous hamburger chain, I was the 1,282,770th caller served. And I do mean 'served' Exec-PC is perhaps the premier BBS in the nation for exchanging software." *BYTE IBM Special Edition*

"Exec-PC, the bulletin board answer to SuperStation WTBS, connects PC users continents apart." *PC World*

"One of the best is Bob Mahoney's Exec-PC out of Shorewood, Wisconsin..." *PC Magazine*

"They provide one of the largest, most extensive libraries of public domain software in the world!" *Denver PC Boardwatch*

"Exec-PC Network is by far the largest BBS we've ever seen. You say you want files? This board has them—whatever kind you want... In addition to having one of the largest selections of public domain software, this BBS is a good source for technical information and help." *PC Resource Magazine*

### WHAT YOU COULD HAVE

Would you like public domain and shareware word processor programs, communications programs, or excellent database management systems? How about personal money managers, or General Ledger programs? If that is not enough, look at the 3000 games and 15,000 free business oriented programs, utilities, tutorials, and reviews. This gives you everything from hard disk reorganization and backup to stock market management systems. We also maintain the *entire PC-SIG collection* online, the 1400+ diskette collection of public domain software from California.

### WHO HAS IT?

Exec-PC owns and operates the nation's largest electronic Bulletin Board System. Through our BBS, our huge software collection is available to anyone who has access to a modem and a telephone line. We have more than 90,000 individual files available for immediate download to your computer, 24 hours a day, every day.

### Registration Form

# EXEC-PC

P.O. Box 57 Elm Grove, WI 53122

**YES!** Register me on the Exec-PC BBS for full access to the country's largest collection of software plus thousands of informative messages and conferences.

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3 Months \$20

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### WHAT IT IS

The BBS consists of a large computer with BIG disk drives (more than 6 gigabytes) and many phone lines connected to it. The computer currently has 100+ phone lines, allowing it to talk to 100+ callers at once; it receives about 3000 calls per day. Using the BBS is easy since it is menu driven and you simply choose what you want to do.

### WE SURE HAVE FILES

A typical user will call the BBS, ask the BBS to show what files are new since his or her last call, find files of interest, then transmit those files across the phone line. After hanging up, the caller can examine and use the new software.

### WE SURE DO TALK

Our BBS also has an active conference system where thousands of people share ideas and solutions. Some conferences include: PC General Topics, Communications, For Sale, Programming, Desktop Publishing, LAN, Graphics, Hardware Speedup, CAD/CAM, Private e-mail, etc. Why pay expensive consultants when there are hundreds of experts available in our forums and conferences?

### HOW TO CALL THE EXEC-PC BBS

1. Set your modem for 8 data bits, No Parity, 1 stop bit.
2. Dial 414-789-4210.
3. The BBS will ask for your name, then you will be guided into the menus.

### IT IS FREE, BUT

You can call the BBS at any time without registering. You can tour the system, read messages, and download some of our files. For greater access privileges you may register at the following rates: \$20 for 3 months or \$60 for one year. There are no hourly or hidden fees! You may subscribe online with VISA or MC, or by credit card, check or money order with the form below.

### Exec-PC

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Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Company (optional) \_\_\_\_\_

Name you will use for Logon to BBS (required)

First \_\_\_\_\_ Last \_\_\_\_\_

Password \_\_\_\_\_

During its prototype stage, the Cleveland Free-Net gathered over 7000 registered users from throughout the Cleveland metropolitan area and handled between 500-600 calls per day on 10 incoming phone lines. In 1989, however, it moved out of prototype in a big way.

A new system was designed around six IBM-RT (Model 135) computers which would be linked together so that, from the user's standpoint, they would appear as one big machine. This new system would provide the Cleveland Free-Net with 96 megabytes of RAM (96 million characters of Random Access Memory), 2.3 gigabytes of hard disk storage (2.3 billion characters of hard disk), and would support up to 360 simultaneous users.

In August of 1989 the Cleveland super-system opened with 32 phone lines on its way to a projected 96 lines by the end of the year. In August also, the Free-Net was connected to the 7000 node CWRUNET fiber-optic campus network. This merger of a community computer system with a campus network was another first.

During the past few months, Cleveland Free-Net has grown into a truly powerful information service - still free of charge, and available to anyone in the country with a modem. Among the offerings, the net now carries the voting records of Congressional Representatives on issues large and small so you can see how your reps voted on bills pending before the U.S. Congress.

The service also provides an online bibliographical database for the Cleveland Public Library System and the Cleveland Area Metropolitan Library System. This network includes 16 academic, 15 public, 12 medical, 12 corporate and 3 school system libraries holding over 10.5 million volumes at 344 physical locations. And online, you can find the location, right down to the shelf, of each book in the system by searching using keyword searches by title, author, or subject.

By including Case Western Reserve University's Cleveland Free-Net in their online distribution plans, the U.S. Supreme Court has essentially taken a solid and practical step toward making their rulings accessible to the widest possible number of citizens at virtually

no cost. By having the twelve points of contact fund it modestly with equipment and a \$6000 operating budget to essentially move the already electronic data off the clerks terminals and onto the port machine, the pilot shouldn't cost the taxpayer a dime. The last time we can recall any body of government doing so much to suit us was when Neil Armstrong placed a collective pawprint on luna.

For more information on Cleveland Free-Net or to obtain details and software to start your own University/Community online cooperative, contact T.M. Grundner, Ed.D. - Director, The Community Telecomputing Laboratory, Case Western Reserve University, 319 Wickenden Building, Cleveland, Ohio 44106; (216)368-5121

#### WORD PERFECT CUSTOMER SUPPORT BBS

As die-hard XyWrite Word Processor fans who'll never change word processors again, it pains us no end to note that the number one word processing program in the world is Word Perfect. But there has been little doubt of this for several years now. According to Dataquest, Word Perfect outsells its closest competitor, Microsoft's Word for DOS by 35-40% and should enjoy a \$400 million year in 1990. The company DOUBLED sales from 1988 to 1989 with 1.78 million units last year. How did this happen? Undoubtedly the program is powerful. It's written in assembly language, as all good software should be of course. And it is feature laden. But we have a theory that Word Perfect's success came from another quarter.

Word Perfect came to the market just as the personal computer was breaking out of its niche as night time hobby to hackers and experimentalists. As ordinary office workers across the country began "learning computers", they obviously started with the number one computer application - word processing. Uncertain, fumbling, fearful, but determined, the uninitiated and unordained did set hand to the keyboard and glared balefully back at the one-eyed monster.

WordStar, the previous king of the hill in word processing, arrogantly presented what was in fact a remarkably efficient command structure, but one

horribly difficult to learn and a support program that left customers wondering what they'd bought into.

Enter Word Perfect. Simple menu structure in its initial version. No wunder-kind ensconced in Silicon Valley - a bunch of Mormons with a new customer support policy. "Here's the program. It's simple. But if you do have a problem, call us. We'll talk to you like normal human beings and help you work through it. We'll even pay for the call. Call our 800 number." A novel concept in the software business.

Well people did call. Not as many as you might think. But they called. More importantly, as they wrestled with Babbage's monstrosity, they knew they COULD call if they needed to. Word Perfect was willing to hold their hands as they "got onboard" the computer revolution. Whether or not they actually had the best support in the business was entirely mute. By offering it freely and without reservation on an 800 line, everyone's perception was that it did. And perception isn't everything, it's the ONLY thing. Today, the company is profiting handsomely by having done so.

Word Perfect actually didn't go to too terrible an expense initially. Most people buying the product called an average of about once in a row. The company staffed the support lines with wives of Brigham Young University students who loved the idea of learning something a bit high-tech, and making a few bucks on a flexible schedule. Word Perfect paid them peanuts in cash and gold in experience and training.

Today, the company has 580 operators manning 250 toll-free telephone lines. Their busiest day is Wednesday, often averaging 13,500 telephone calls. Friday is the slowest. There have been growth problems along the way of course. At one time AT&T didn't have enough trunk capacity into town to handle it all. But generally calls are answered quickly and efficiently.

Meanwhile the rest of the software world is trying to turn support into a profit center with \$150 fees for 90 days of support on a program they just sold for \$495.

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Personal Computing Magazine, May 1989

# STAR-LINK

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Zip \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Name you will use for Logon to BBS \_\_\_\_\_

1 - 9 Character Password (Please Print Clearly) \_\_\_\_\_

Prices and specifications subject to change without notice.

We just bought into a deal with Microrim for the R:Base for DOS program at an attractive \$169 in response to a direct mail solicitation. Ten days after they cashed our check they announced a NEW version R:Base 3.0. The upgrade policy? We can upgrade for \$175 - six bucks more than we paid for the program. Oh, if you've been running a PIRATED copy of R:Base you can upgrade for \$175 as well. This is how to KILL a software product/company with "support". Treat the pirates better than the guys who bought your product ten days ago.

Even the less obnoxiously suicidal companies let you dial on your dime and wait on hold for seven minutes. And the more obnoxious ones, seen recently through the window so to speak, are into 900 numbers at a buck a minute or so.

Word Perfect has also installed an electronic bulletin board titled The Word Perfect Customer Support BBS for registered owners of versions 4.2, 5.0 and 5.1 of the product. The system fea-

tures several access lines using PCB-board BBS software. The U.S. Robotics HST Dual Standard line is available at (801)225-4444. The system is a trifle (yawn) boring but seems well suited to its stated task. We noted about 450 printer drivers available for download for version 5.0 and probably as many or more for 5.1. You must enter your registration number and wait 48 hours for verification before you're allowed access to the other areas.

## SEAGATE TECHNICAL SUPPORT BBS

Hard drive systems are the actual heart of a computer system. All other components act to put data on, pull data off, communicate, or display the data stored there. They are essentially the most unreliable piece of equipment in a computer. And in recent years they've essentially become something of a commodity in the market. The price sensitive nature of drive marketing has brought Miniscribe into bankruptcy to

be eventually purchased by Maxtor, and CDC recently sold its entire Imprimis line of hard drives to Seagate.

For the savvy buyer, the best deals on disk drives are available through mail order houses who specialize in little aside from hard disks. Hard Disk International and D.C. Drives have carved out niches in this area. As a result, disk drives with a list price of \$1500 can often be had for less than half of that. We recently purchased a model ST1100 from D.C. drives for \$662 including shipping. This is one of the SWIFT line Seagate got with their purchase of Imprimis. The drive is a very trim 3.5 inch model with a formatted capacity of 83 MB. It is an MFM drive with a remarkable average access time of 15 ms - previously more common only on very fast ESDI units. Best of all, it has a 70,000 hour Mean-Time-Between-Failure (MTBF) rating - over double that of most competitively priced units. MTBF, while not an actual prediction of time before failure, is a relatively good indication of the expected operat-

ing lifetime of a piece of hardware. For BBS operators, it should be a prime consideration as disk drive failures are not good news around BBS.

The problem with all this is of course support. If you order a disk drive from the mail order houses, that's usually what arrives in the box. While most peripherals come with extensive documentation covering installation and use, disk drives normally come with a software disk and some foam rubber. And installation procedures vary widely depending on your controller type, drive type, and whether it is the first or second hard drive on your system.

In February, 1989, Seagate inaugurated the **SEAGATE TECHNICAL SUPPORT BBS** at (408)438-8771. The system runs on Wildcat BBS software from Mustang Software and features a single U.S. Robotics HST 9600 access line.

The system offers two basic download file areas. Area A contains specifications for virtually every model of hard drive offered by the company. During installation, it is often necessary to know the number of heads, platters, cylinders, sectors, etc. on the drive unit. This is the place to find out if you don't know or aren't certain. Area B contains some fairly specific installation instruction files.

The message area is not a big resource. Essentially, if you leave a message, leave a voice phone with it. According to sysop Shelley Toich, they generally just call the person leaving a message by voice phone to try to straighten out the problem. Seagate Technologies, POB 66360, Scotts Valley, CA 95067; (800)468-3472 voice.

#### INTERLINK TAGLINE WINNERS

One of the most popular aspects of electronic bulletin boards is message conferences. Early on, the e-mail concept evolved into public discussion areas. To cut down on confusion, these further evolved into segregated message conferences with each limited to a particular topic. Since the message traffic on any particular topic, particularly the more specialized ones, might be sparse, BBS systems began linking messaging conferences so that dozens or even hundreds of boards shared all messages on

a topic. Individuals from around the country began gravitating toward areas of their own interests. Today, you might participate in a message conference on desktop publishing, for example, on a local BBS but the discussion involves participants from all over the nation who access the forum via local BBS in their area.

Out of this has come a convention termed "tag lines". These are little summation messages a participant might add to the end of each message. Think of them as the bumper sticker of online conferencing - political statements, humor, and so forth.

Executive Network BBS in New York City (914)667-4567 serves as the central home system of a network of PCB-board systems titled **INTERLINK**. A few months ago, sysop Andy Keeves initiated the first ever tag line contest - **TAGS-R-US**. Tag lines must have actually been used in Interlink during the current contest month. Each person may vote for up to ten tag lines per month. The tag lines receiving the most votes each month will be declared winner. First place winner receives choice of QMail Deluxe or EZ Reader software, copy of John Hancock software (a tag line program), and a subscription to Boardwatch Magazine. Second place winner will also receive a subscription to Boardwatch and we've agreed to publish the top three tag lines each month.

#### MAY 1990 TAGLINE WINNERS

##### 1st prize: Joe Malacria

"The number? Dial randomly.  
You'll get us eventually."

##### 2nd prize: David Greenberger

"Don't judge a book by its  
movie."

##### 3rd prize: Ian Molee

"The road to success is always  
under construction."

## SOFTWARE NOTES

#### eSOFT RELEASES INTEGRATED MAIL SYSTEM

eSoft, Inc. did release version 1.0 of their new mailer product for TBBS bulletin board systems as of May 21. The new product, titled **The Integrated Mail System (TIMS)** offers the first true multiline mail facility for Fidonet style mail transfers. With this product, TBBS based echo mail hubs can handle incoming mail sessions on up to 32 telephone lines simultaneously and any mix of automated mail session and manual callers.

At the time of release, **TIMS** worked with virtually all existing mail packages used in Fidonet in their current versions with the exception of **D'Bridge** version 1.30 by Chris Irwin. Some difficulties in handling file requests from this program were noted along with various vagaries in obsolete versions of some other mail programs. Since most system operators run the latest releases of mail programs, that should not be a problem.

The development of **TIMS** within eSoft was primarily headed by Bob Hartman. Mr. Hartman is fairly widely known as one of the authors of **BinkleyTerm**, a very popular freely distributed mail program used by a large percentage of Fidonet operators.

Officially joining the eSoft team in Aurora Colorado in March, Hartman has an extensive background in programming and communications. eSoft head Phil Becker noted in a recent TBBS newsletter that "while Hartman does have a Masters Degree in Computer Science, I have verified that he can still design software anyway."

While **TIMS** will likely serve as a boon to Fidonet, eSoft's real target seems to be corporate America. In tandem with a coming laptop communications product, road warriors will be able to send to and receive files from the home office TBBS information system without ever actually logging on to the service. A pop up window will allow them to **TIMS** a word processing file, e-mail message,

or order entry file, for example, to the home system just by selecting an option and specifying the file. The program will automatically dial and drop off the file and pickup any waiting e-mail on the service as well. The result will be a virtually fool-proof communications method where files and E-Mail are "timed" as easily as paper documents are now faxed.

Internally the laptop product is referred to as **The Brain Dead Mailer** although the release title will probably be **TIMS Remote**. eSoft projects an autumn release.

We've also learned that the next upgrade to eSoft's main product, **The Bread Board System (TBBS)**, to version 2.2 is planned for Christmas. The new version will feature an outdial capability that will allow **TIMS** to initiate outgoing Fidonet mail sessions as well. The new version will also likely incorporate the **ZMODEM** file transfer protocol as well as viewing utilities for **.ZIP**, **.ARC**, and **.LZH** files. eSoft, Inc., 15200 E. Girard Ave., Suite 2550, Aurora, CO 80014; (303)699-6565.

#### ARC VERSION 7.0 DUE

System Enhancement Associates is set to release version 7.0 of their long popular **ARC** compression utility. According to SEA president Thom Henderson, **ARC** version 7.0 will be faster than **LHARC** and slower than **PKZIP** in operation - but offers better compression than either competing archive utility.

Archive/compression utilities have become one of the keys to the online transport of software and files. Most programs consist of up to 20 individual files. Sending each one by modem to pass a single software program would be incredibly tedious. The archive programs combine as many associated files as you select and combines them into a single file. You can then send them over the modem to another computer. The recipient must then use the same archive program to unarchive the files into their original form.

The added bonus is compression. Almost all archive programs use mathematical algorithms to squeeze the air out of the files archived - effectively compressing them to the point where

the resulting archive may be less than half as large as the sum of the original files. This is big economic bonus when dialing long distance.

A little over a year ago, the state of the art of compression seemed to have been reached. Many claimed that compression had gone as far as it could. A brand new archive program arriving from Japan in March '89, titled **LHARC**, touched off a performance war that has led to major improvements in **PKZIP**, **PAK**, and now **ARC**. Competition is fierce and those who know to use one of these magical utilities are clearly the beneficiaries.

The new **ARC** version is faster than the current **ARC 6.02** and provides much better compression. But features comprise the main upgrade. **ARC 7.0** includes versions for PC, OS/2, and Windows. Most notably, **ARC** is now virtually a backup utility allowing compression of entire subdirectory groups which can be saved across multiple diskettes. If you have a database subdirectory you want to back up and the resulting archive file is still 3 MB compressed, simply use the multivolume feature to archive it across several diskettes. Entire subdirectory structures can be archived and on retrieval the necessary subdirectories will be created and the files extracted to their appropriate positions.

The program also provides a few other items. You can include fairly lengthy comments describing each file in an archive. A header description can be included to describe the archive itself.

One element of archive programs in recent years is the growth of third party shell programs. Archive programs typically run from the command line and other authors have produced shell directory programs to provide an easy interface. **Arcmaster** and **Narc** are the two most widely distributed of this genre. **ARC 7.0** includes its own shell program titled **EASYARC** allowing you to mark files in a subdirectory for archiving. Notably, **EASYARC** is expected to feature full mouse support. In essence, a point and shoot interface for your archive program. The program will be released as shareware with a \$35 registration fee and will be available from their **SEA**board distribution BBS at (201)473-1991.

SEA also markets a very popular automated E-Mail program titled **SEAdog**. The program has become a favorite of a number of governmental services including the National Forest Service for passing e-mail between geographically remote PCs automatically. Essentially, these agencies can set up their own private wide area networks using **SEAdog** to share e-mail and files. The **GAO** has mandated use of **CCITT** standard **X.400** for all government e-mail by 1995. Henderson admits they are looking at developing a product to allow **X.400** mail exchange for PC users although no product announcement is imminent. "It certainly appears to be in our future," notes Henderson.

With current **X.400** gateway systems for PCs running in the \$4000 to \$6000 range at the low end, it would appear he has room to do so. A relatively inexpensive (\$100-\$500) **X.400** desktop gateway program would blow that market to chaos in rather short order. While **X.400** is not a notably easy specification to implement, it is certainly within the reach of most BBS software vendors. And with that kind of pricing door standing wide open, somebody is going to step up to the plate soon. System Enhancement Associates, 21 New Street, Wayne, NJ 07470; (201)473-5153.

#### QUICKBBS SOLD AGAIN

A few years ago, we dialed into a local BBS here in Denver titled **TURBO BBS**. It was run by a fifteen year-old cherub faced lad named Adam Hudson. Not only did he run it, he wrote it. Turbo BBS was the first system in the country to carry information about a fledgling publication titled **Boardwatch Magazine**. In fact, our premier March 1987 issue was carried full text on Hudson's system.

Turbo BBS was so named because Hudson was completely enamored of Borland's Turbo Pascal programming language. And the system was written in Turbo Pascal. We watched Turbo BBS grow in features over the months. Eventually, he released it as **QuickBBS** with a modest \$25 registration fee. He appeared at a local Fidonet meeting here in Denver and quietly announced it was

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ready for distribution. He modestly mentioned to us that he hoped it would catch on.

It did. The product was completely configurable and offered a rich set of features previously unavailable in all but the upper end of commercial BBS software. Excellent screen/menu design, a rich set of menu options, and you could make it appear as whatever you desired. Rather than chaining you to the author's vision of what a menu should look like, QuickBBS encouraged creativity.

We registered a copy and ran QuickBBS with some success for a few months here at Boardwatch. We loved it. We loved everything about it. We loved it before there was ever a single doorway program available for it and today there are dozens. There was one fatal drawback for us. It was limited to one single telephone line in a world full of them. We asked Hudson when it would be available multiline. His answer alluded to Siberian days in Gehena and we ruefully said goodbye to QuickBBS.

Not everyone did. Within a year QuickBBS virtually took over the market for Shareware bulletin board system soft-

ware. Thousands of QuickBBS systems sprang up around the globe and it can be safely assumed QuickBBS was the most popular shareware BBS package in existence. Dozens of third-party utilities and game doorway programs came to life. Hudson registered over 1000 copies in a two year period.

Over the past year we've lost track of it to a large degree. The subject is worth a revisit. Last fall, Hudson sold the program to a group in Florida titled The QuickBBS Group Inc. headed by Allen Fitzsimmons. The QuickBBS Group also had a couple of programmers, Steve Gabrilowitz and Richard Creighton. Apparently, before the check from the first registration was quite cashed, the three were at each other's throats over stock options and how to divvy up the pie. Rumor has it that Fitzsimmons became disgusted with the whole thing. On April 4 he sold the product to Brett Floren and Steve Vickers of Ultimate Software Technologies Inc. of Longwood Florida for an undisclosed sum.

We've recently learned that the issue is not quite dead. USTI has some pretty intense plans for the future of Quick-

BBS and we were privileged to speak with Brett Floren late one night regarding those plans. They sound a bit ambitious. So ambitious, we must preface our report with the note that none of this has actually come to pass yet and it clearly sounds to us to be too good to be true. You're either reading about a very interesting BBS development, or an account of some of the most wishful thinking in the history of BBS software. We'll pass on what we've heard and let the coming months tell the full story.

According to Floren, Ultimate Software was working on a BBS product at the time of QuickBBS purchase. QuickBBS was written in Turbo Pascal and their product is essentially written in C language and assembly language subroutines. They've borrowed what they found attractive about QuickBBS and married it to their current development product. The result will be titled UltiBoard/QuickBBS and will be available in several versions.

There will be a bug fix of QuickBBS as it is currently. This will be QuickBBS 3.0 and it will likely be the last version under Turbo Pascal.

The Standard Edition of the new UltiBoard/QuickBBS will be multi-node after the fashion of Wildcat/PCBoard. Ostensibly, you can run as many nodes as you have machine resources for with several nodes under a single CPU using Quarterdeck's Desqview. This product will run virtually any door available for PCBoard, QuickBBS, Wildcat, or Opus and is capable of "writing out" whatever is necessary to appear to any of those doors to be a PCBoard, Opus, QuickBBS, or Wildcat system. The Standard Edition will also be Multilingual supporting French, German, and English. There will be 256 security flags vice QBBS current 32. USTI claims it will actually be easier to configure and run than the current single line QuickBBS.

The basic program will be available in 45 days at a price of \$60 including a nice box, printed manual, and serialized diskettes. Those who registered QuickBBS under the QuickBBS Group Inc. will be able to upgrade for \$25. The \$60 price covers a single line version with higher numbers of lines available at an increased cost. However, the increase Floren spoke of was on the order of \$20

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for each two added nodes. Conceivably, an eight node system would run less than \$150.

Current QuickBBS operators will have little difficulty in upgrading to this multi node version. A conversion utilities package will allow all message and user databases and menus to make the trip virtually intact.

Much more exciting was the Enhanced Edition Floren described. It doesn't sound enhanced. It sounds like an entirely new product. This is a true multi-line version capable of supporting up to 32 lines on a single machine using Digiboard serial breakout cards without any Desqview or similar multitasker. It will have its own multitasker built in. The product is scheduled to support all popular protocols including ZMODEM, JModem, SEAlink, and others on up to 32 lines. It will have the look and feel of QuickBBS but with some enhancements to the sysop interface. Most notably, they plan an integral mail system that will support both incoming and outdialing mail sessions with **BOTH** Fidonet and UUCP Usenet and dynamic interface with the online message base. You will not need third party mail software such as D'Bridge or Front Door to act as part of a network.

One thing very difficult to do in a true multiline environment is allow the use of third party doors. The Enhanced Edition will **NOT** support existing third party doors available for QuickBBS, PCBoard, and Wildcat. But Floren insists doors are possible within certain guidelines and they plan to offer a **FREE** Door Authors Kit describing in detail what is necessary to create a door program for UltiBoard/QuickBBS.

The product will also feature a three-tiered interface featuring ASCII, ANSI graphics, and an Extended Terminal Graphics (ETG) interface. ETG is a proprietary graphics control language allowing the BBS to cause pop up windows and menu graphics on the callers terminal. The required terminal program used on the callers machine is titled, appropriately enough, UltiTerm. It will be available at \$35 and will support communications ports up to COM35 (why?) and a file tracking database along with ETG emulation. Floren alludes to the fact that this termi-

nal program will be included in the box with a major modem manufacturer in the near future but declined to name the vendor. A "trial" version of the software will be available that "dies" after 30 days use. Frown by Obnoxious Editor Inserted Here.

The pricing on the Enhanced Edition? Exact pricing has not been set at this time and the program is still 4 to 5 months away, although Floren insists that this is **NOT** an optimistic time frame despite our howls of disbelief. But USTI is operating under the concept of a \$150 version supporting 2 to 4 lines WITH the integral mail program and as little as \$100 without. Pricing will be scaled up from there to the 32 line limit. But we got the impression that the low end was not the "teaser" used by some firms. Incremental pricing would be reasonable and there would be a full "trade-up" allowance for the smaller versions.

Finally, an Enhanced 386 version will be available to take advantage of 80386 microprocessor protected mode hardware.

We would stress that USTI has no working version of a 32 line BBS in operation at this time, nor have any of the principals of USTI previously done a multiline BBS software product of any kind. Given the substantial technical hurdles of such a task, this may all be pie-in-the-sky, the fanciful ravings of madmen. But it sounds like a very attractive pie. And historically many things have been accomplished by men the world negligently failed to inform beforehand that the proposed was also the impossible. If the vision of Brett Floren and Steve Vickers can be translated into Rhubarb on the table for QuickBBS system operators, we may have another able contender in the BBS software game. Ultimate Software Technologies, Inc., 497 Blackwood Ave., Longwood, FL 32750; (407)767-0053 voice; (407)831-2359 data.

#### BBS SOFTWARE FOR APPLE IIGS

The ideal BBS machine would seem to be an IBM compatible using an Intel 80786 microprocessor operating at 150 MHz with 16 Gigabytes of storage. Our order is certainly in. Yet by far the

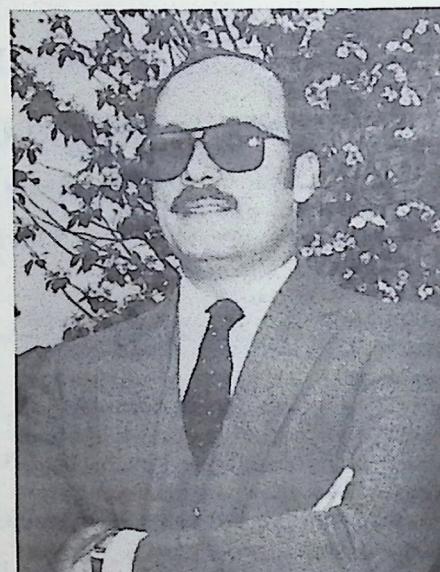
majority of BBS systems are operated as a hobby for fun. And not everyone wants to invest \$20,000 in a hobby.

David Alden and SofTools Inc. has announced release of version 4.2 of their **Magic City Micro Bulletin Board System**. The product provides a very easy to install and operate BBS capability for Apple IIGS, IIe, IIc+ and II owners.

The MCM BBS provides multiple message areas, e-mail, program libraries, and online games in an affordable \$59.95 package. The system is easy to install and easy for new callers to operate without graduate level training. The program has been available since 1984. SofTools, Inc. P.O. Box 60623, Palo Alto, CA 94306; (800)283-3901 voice; (415)856-6719 data.

#### POPFORM PROGRAMMABLE FORMS GENERATOR

by David Hakala



Mail-merge is one the handiest features in word processing. By inserting codes in a form letter for field names like "Salutation," "Last Name," "Outstanding Balance," etc., a word processor can be programmed to take data from a database file and insert it at the appropriate places in a standard form letter. The result is more personal and effective than a "Dear Sir or Madam" type of letter.

But mail-merge has its limitations. You can select only one group of data for one type of form letter in a single pass through your database. The fields to be merged must be printed from the database to a text file of exact format. Then you must exit the database, load the word processor, load the form letter and run the merge facility. That's a lot of trouble to print one or two letters! If you have two or more form letters to send out, you must make several runs through the database and mail-merge routines.

**POPFORM**, a shareware product of Integra Computing, can be called up from within any database, spreadsheet or other program, grab data from the screen and merge it into a pre-printed form, and send the result to paper or disk. You can use POPFORM on the fly while browsing a database, or POPFORM can be programmed to extract records meeting specified conditions and print them to different forms, in one automated pass through the database. It can even perform math computations on data items snipped from spreadsheets.

POPFORM makes simple form printing easy, and permits one-pass multiple-form mail-merge runs through any database. It will look at a screen of data, decide which form if any should be used, grab the appropriate fields for that form, print it to disk or paper, and move on to the next record -- while you take your secretary to lunch!

POPFORM is great for those ad hoc decisions we reach when browsing a database. There's Mr. Deadbeat, and we notice he hasn't paid us in the last 90 days. Hit the POPFORM hot-key, select "DUNNING" from a list of preprogrammed forms, and Mr. D gets a nasty letter. Then you might decide to send a letter to your attorney about Mr. D's delinquency. Select the "COLLECT" form letter, and the pertinent facts about his account are merged into a "sic-em" letter to your attorney.

Most mail-merge utilities get their data from a text file on disk. POPFORM grabs its input from the computer screen, so it must have a "Screen Specification" for every form letter. The screen specification tells POPFORM what to look for on the screen, where to start and stop reading data for a given

form, what comparisons or computations to make on the data, and how to print the results on the chosen form.

While commands are provided for absolute, x-y cursor positioning, POPFORM does not need screen coordinates to find data; that would require strictly formatted data displays. POPFORM will, for example, find the field "Name:" wherever it lies on the screen, and take that position as its starting point for capturing the "Name" data. So POPFORM will work with freeform databases that allow field orders to vary from record to record, variable-length fields that shift field names to make room for more data, and a variety of application programs. POPFORM can even be programmed to handle cases in which the expected fields are missing, without ruining the entire merge session.

The screen spec can define the number of characters to read past the starting point and the number of characters to print to the form. The latter is used to start printing at a precise position on a form, regardless of the number of characters printed. [30]("Name: ",20) tells POPFORM to find the key word "Name:" and read the next 20 characters on the screen. It will then print the 20 characters, plus ten blank spaces. This routine would be used for printing a 20-character field to a 30-character form space. Now your print head should be positioned for the next entry. If the printable length is shorter than the data read from the screen, the print-length feature allows trimming to fit.

POPFORM is not just a dumb cut-and-paste program. Its forms can include commands to read the current date, weekday and/or time from the computer clock and insert the value in the form. A line of text can be centered on the page. Headers and footers can be specified.

Other commands set top, bottom, left and right margins, tabs, and enable or disable word-wrapping as needed. POPFORM accepts control characters for italics, bold, underlining and whatever other doodads your printer can add.

You can add user prompts, such as "Enter the action the receiver of this letter should take," and POPFORM will pause for user input to the form letter. Another function code prompts

the user for a filename, which can be whole paragraphs of boilerplate to insert in the letter.

A form can be programmed to splice lines together (ignore carriage-return/line-feed), overwrite a previous line, or force a carriage return regardless of what's in the data being printed. These features help POPFORM reformat text to fit the form, even though the database or spreadsheet screen from which text is snipped may include or omit carriage returns.

POPFORM is virtually a programming and database language in its own right. It offers conditional (IF..THEN) branching, GOTO and GOSUB functions, DO WHILE looping, and a slew of other commands. You don't need all this power to knock out mailing labels and simple mail-merge letters. POPFORM even comes with sample forms for common tasks like printing mail labels, checks and even a school report card.

The programmability of POPFORM makes it possible to correctly fill in forms even if certain data elements are missing from database records, a common failing in real-life data processing. The ability to print to files instead of printers makes it possible to process multiple forms in one pass through a database, then use a single printer to print each batch of generated forms.

POPFORM is just one example of Dick Kelly's outstanding series of professional shareware. Other titles include:

- **TickleX:** the ultimate in scheduling/planning/docket control
- **MT-Tracker:** TickleX's scheduling power, plus client management
- **BillPower:** time & billing with totally integrated general ledger
- **RAMdesk:** pop-up network message system, calculator, scheduler, phone directory, time/work/expense log, data base
- **Nifty:** combination menu and pop-up help system

**POPFORM.ZIP** is available for download from the subscriber area of Boardwatch Online Information Systems, and from other fine BBS everywhere. INTEGRA COMPUTING, Box 72063, Marietta, GA 30007-2063. Voice: (404)973-3586

## WRITING ABOUT TELECOMM

By John C. Dvorak  
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When Nick Anis and I holed up in a French garrison to write the most complete telecommunications compendium, *Dvorak's Guide to PC Telecommunications*, we had no idea as to what a moving target the telecomm scene was. Of course that's part of the reason that we made every effort to put the book on a tight schedule so all the information would be up to date. Still . . .

Things are changing fast. Luckily, not fast enough to make the book obsolete for at least a couple of years, but still changing enough to make it interesting. Of course being under non-disclosure with a lot of companies all the time with it in mind that material would be included in the book as products were released makes this easier.

But some new things are out and worth a mention. When we started *Dvorak's Guide to PC Telecommunications*, Anis was using Telix and I was using Procomm. Transferring files from

Northern California to Southern California a distance of 400 miles seemed more like an overseas call. Each time our 25 minute file transfer aborted Anis would bitch. "Why can't you use ZMODEM with crash recovery?" My program didn't have ZMODEM which is built into Telix. Once we both started using Telix and ZMODEM even if a transfer aborted we could resume the file transfer and pick up where we left off. Telix and ZMODEM saved us transfer time, money and gave us a whole lot less aggravation.

It made perfect sense that we would include Telix with its built-in ZMODEM file transfer protocol with the book. We also considered the shareware edition of Procomm and the current version of QModem, at the time 3.1, but Telix had them beat.

Although the shareware version of Procomm hasn't been updated, both Telix and QModem have had recent updates. QModem which has always been a great program is now even better. QModem uses a bit more disk real estate than Telix and Procomm but also offers many more features. The most significant feature of the new release of QModem is the ZMODEM file transfer protocol is now built-in.

QModem's built-in ZMODEM file transfer protocol is based on the public domain ZMODEM code commissioned by Telenet and written by Chuck Forsberg. QModem has a nice host mode, advanced learn mode, full batch file transfer support (including script language, host and terminal mode), gives you access to as many as 10 external protocols, a great DOS shell that only takes 4K of precious DOS memory, quick modem configuration, and one of the best dialing directories.

Every telecommunication program should have features like a quick modem configuration, allow you to attach post it notes to your dialing directory entries. Nice idea.

While talking about protocols, the last great protocol to gain any degree of acceptance was Forsberg's ZMODEM. ZMODEM's 98% efficiency and ability to handle line noise are tough acts to follow.

One guy who can tell you stories of what can go wrong with protocols is Mat Thomas. Mat Thomas, author of the Lynx protocol, seems to have learned many lessons from the two years and thousands of lines of code he's been through trying to get Lynx to work. He's completely started over and come out with a new protocol called Puma which will soon be renamed to MPt for trademark reasons. MPt supports error and non error correcting modems, batch transfers, and multiple block sizes. The flashy status screen has make it the most visual protocol if not the most informational. MPt seem to handle noise and glitches extremely well. I'm still a big believer in king of the hill ZMODEM (see more later) but it's encouraging to see things aren't ending.

On a house boat in Oregon, is where the king of the protocol-writers resides, Chuck Forsberg. He's been busy with his new ZMODEM Moby Turbo feature. He's managed to squeeze some more characters over tens of thousands of telecommunications lines ZMODEM is humming away on. ZMODEM's Moby Turbo mode is interesting because Forsberg keeps finding ways to squeeze a few more characters while still giving us software error correction. Forsberg's DSZ driver includes the current version of ZMODEM with this feature and has two proprietary extensions that aren't available anywhere else. Run Length Encoding (RLE) a rudimentary form of data compression and Moby Turbo a method of quoting fewer characters in the stream achieving additional improvement in throughput. ZMODEM-90 (tm) has a number of other extensions that improve throughput. Forsberg will license this code for developers who want more than the public domain ZMODEM.

Meanwhile, PKware and Phil Katz have cut the revenue of the phone company from file transfers again by releasing version 1.10 of the PKZIP data compression utility. Two of the most significant features of this release are what users crave in file compression utilities: improved speed and compression. There are other more colorful features like author authenticity code that help users be certain a software publisher's ZIP file hasn't been altered. To use this feature software publishers and

shareware authors only need register and license **PKZIP** and the companion program **PUTAV** for a modest fee. It seems foolproof - providing sysops don't delete or change files in ZIPs uploaded to their board. ZIP screening utilities will have to be modified to not delete or change files but sysops can still add files and comments. This shouldn't be too difficult.

PKware's new **2.9K** mini self-extractor is a great improvement over the full sized **16.8K** (now down to **12.8K**). There should be a lot more interest in self-extractors now that **PKZIP** and **PKUNZIP** let you manage the self-extracting .EXE file the same way you can a .ZIP file.

Onward. SEA's **AXE** and Graeme W. McRae's **SCRNCH** programs which create self-extracting auto executing files now have two new competitors. There is the new **LZEXE** from France written by Fabrice Bellard. It compresses .EXE files in a flash at about the same efficiency as the old **PKARC** program. If you want even tighter and faster compression for auto executing **BOTH COM** and **EXE** files try the new **PKPC** program - another winner from the folks at PKware. **PKPC** can even beat **PKZIP** compression.

Somewhere is remote village in Japan the author of the public domain program **LHARC**, Haruyasu Yoshizaki, is burning the midnight oil readying his new release of **LHARC**. Like PKware, the new release will offer improvements in both speed and compression. Improving speed shouldn't be too difficult considering how slow the present release is. The people who have been writing stand alone, faster extracting programs for **LHARC** can probably toss them now. The current release of **LHARC** uses the dynamic Huffman method which besides being slower needs to be in the code of the compressor and the extractor. **LHARC**'s update will be using a new algorithm which will mean previous versions of **LHARC** will not be able to extract files compressed with the newer release. Yoshizaki's code is public domain and he releases source, some of this new compression should find its way into other applications like backup programs.

On another scene, Net mail systems are really getting popular. Interlink seems to be growing the fastest with new nodes now open Stockholm - Sweden, London - England, and Sidney - Australia. Things are also hopping at Smart net, Metro net, RIME, and AMIRANET. It's encouraging to see users banding together so well.

A lot of people have been asking me about the new telecomm program **COMM** that is a mere **40K** file and has no internal protocols. Nick is a big fan of this thing, but I'm not thrilled by the non-standard **ALT** key usage. **COMM** is an assembly language program that is easily customizable and is a great companion for **DSZ** users. If you're hooked on **Alt-D** for dial, **ALT-H** for hang up, and the other keyboard commands common to programs like **Telix**, **QModem** and **Procomm**, you'll be surprised to learn **COMM** defaults to a different set of commands. You can customize these commands, but I think they should be right in the first place.

Give **COMM** a try - especially if you have a laptop or notebook where space is at a premium. If you want to try **COMM** be sure to snatch a copy of Forsberg's **DSZ** (current version is **DSZ0411**).

Santronics' Hector Santos released **v2.26** of **Silver Xpress**, the civilized way to achieve, download, answer and upload e-mail on **Opus**, **Fido**, **Quick-BBS** and other bulletin boards. This mail bundler/offline reader saves callers long-distance money and lets a BBS serve more callers without adding more lines. The registered version even allows automated file requests.

But the big news is **FAX COMPATIBILITY!** It's a shame people use **FAX** machines instead of e-mail, but they do. E-mail can be translated into **FAX** format and faxed to a single party or a list of receivers by a BBS equipped with a **FAX** card and **Faxpress**, a **\$59.95** non-shareware product. **Faxpress** bridges the gap between the relatively small world of modems and the huge **FAX** population. Considering the **\$0.85** to **\$2.00** per-page charges of walk-in **FAX** service bureaus (and the time spent **WALKING IN** to them), **Faxpress** offers sysops a terrific way to make their

systems pay for themselves! Log on to Santronics' BBS for **Silver Xpress**: **(412)864-2294, 8N1**.

So as you can see, there are plenty of things happening out there.

#### PKware

7545 North Port Washington Road  
Glendale, WI 53217-3422  
(414)352-3670 Voice  
(414)352-7176 BBS  
Registration for **PKZIP** **\$47** plus **\$3.50** for shipping and handling.

The Forbin Project, Inc. John Friel III  
P.O. Box 702 Cedar Falls, IA 50613  
(319)232-4516 Voice  
(319)233-6157 BBS  
Registration for **QModem** **4.1B** **\$30** - **\$50** with disk and manual.

#### Omen Technology, Inc.

Chuck Forsberg  
17505-V North West Sauvie Island  
Road  
Portland, OR 97231  
(503)621-3406 Voice  
(503) 621-3746 **TELEGODZILLA**  
BBS

Santronics Software  
1451 Plymouth Avenue  
Irwin, PA 15642  
(412)864-2294 **Silver Express** BBS

Osbome/McGraw-Hill  
2600 Tenth Street Berkley, CA  
(800) 227-0900  
*Dvorak's Guide to PC Telecommunications* 1,200 pages with 2 bound disks  
**\$49.95** ISBN 881551-1

If you have a text capsule on a new telecommunication product or service you can tell Dvorak & Anis uploading a file to their BBS system at **(714)396-0014**.

## DR. FILE FINDER

### SPREADSHEETS

#### Bricklin & Frankston -- The Founding Fathers

by Mike Callahan AKA Dr. File Finder

In 1978, Dan Bricklin and Bob Frankston teamed up to create a product that would end up turning Apple Computer from a garage operation to a multi-billion dollar corporation. Bricklin and Frankston created the first electronic spreadsheet program which they called "Visible Calculator" or VisiCalc. Before long these two MIT and Harvard graduates and their firm, Software Arts entered into a marketing agreement with another firm to form VisiCorp. Software Arts grew to a \$15 million company with 130 employees while VisiCorp grew even larger and became one of leading software companies in the industry.

During the period from 1978 to 1982 Software Arts and VisiCalc were growth companies and VisiCalc was the spreadsheet program to have. Just about every Fortune 500 (now 1000) firm, had an arsenal of Apple II systems with a fresh copy of VisiCalc.

VisiCalc broke new ground as the first spreadsheet program. Many marveled at the wonders of columns and rows magically recalculating in an instant. In 1981 the IBM PC began to capture significant market share. A version of VisiCalc was quickly developed for IBM compatible systems -- some say too quickly. VisiCalc needed more features and better data integration. An upgrade was needed badly and VisiCalc's sales began to decline. VisiCorp filed suit against Software Arts and things began to go from bad to worse.

One of the key people at VisiCorp, Mitch Kapor, left to form a new company, Lotus. He announced his new product, Lotus 1-2-3 with much fanfare at Fall COMDEX - Las Vegas in 1982. Kapor was a master showman. The roll-out for Lotus 1-2-3 was in a rented airplane hanger complete with

champagne, slick literature, and demonstrations. Soon the industry was ablaze with the catchy phrases at the unveiling:

- 1 for Spreadsheet
- 2 for database and
- 3 for graphics.

Although an integrated package, by the standards at the time, 1-2-3 ver. 1/1A, would not fair too well by today's standards. Marketed aggressively and filling a need of the quickly growing numbers of corporate personal computer users, 1-2-3 became the most successful software package for the IBM PC.

The impact on VisiCalc from Kapor's marketing strengths and Lotus 1-2-3's integration was quickly apparent. VisiCorp and Software Arts would suffer huge financial losses and layoffs. Eventually Software Arts was purchased by its slayer -- Lotus.

For a time Bricklin did some consulting for Lotus and then took a stab at publishing a new product, Dan Bricklin's Demo Program, which was also a success. In 1988 Bricklin sold his program -- then called Dan Bricklin's Demo II to Peter Norton Computing for an undisclosed sum. Bricklin who has always been active in the computer industry fared much better this time.

Dan Bricklin has been active with computer user groups, trade shows and publications. Bricklin is highly regarded for his accomplishments and contribution to the industry. It's ironic that Bricklin and Frankston, who created VisiCalc and thus launched the personal computer industry, were swallowed up by its currents. While nothing has been heard of Frankston for several years, recently we learned that Frankston and Bricklin were working together again for a software firm called Slate Corporation involved in developing software for laptop computers using stylus/pen input rather than keyboards.

You can use a spreadsheet program in place of a piece of columnar paper, pencil, and a calculator to build large matrixes of numeric/financial data. Since typically one result in a single column can effect the calculation of dozens or even hundreds of others, spreadsheets are the perfect "what if" tool for complex calculations. By changing the data

in the single column, all other dependent calculations throughout the spreadsheet are automatically recalculated as well. In 1978 when the first spreadsheet, VisiCalc was released, one person with a computer, printer, and VisiCalc could do the same work as a dozen clerks with columnar paper. Erasers, Liquid Paper, and frustrated secretaries trying to layout and type from scratchy pencil notes became a thing of the past.

Like the columnar paper they supplant, spreadsheet programs work with columns and rows. Spreadsheet programs aren't actually spreadsheets at all. They are electronic spreadsheet programs. Since columnar paper is all but extinct, the word "electronic" is often omitted. Each section is called a "cell" and the column width can be set for a single column or a group of columns. The titles can be locked horizontally or vertically or both. The screen can be split horizontally or vertically and multiple windows can be opened of one file or a group of files.

Spreadsheet programs are RAM intensive. Shareware spreadsheet programs take about 250K of RAM to execute and leave under 300K RAM for calculations in a typical 640K system. You should have enough memory for a 5-10 page spreadsheet if you design it right.

While all commercial spreadsheet programs can load spreadsheets or "worksheets" into expanded memory (EMS), most shareware spreadsheet programs lack this feature. Expanded RAM support is a mixed blessing. The added code will use more of the conventional memory and users who don't have expanded memory will end up with less workspace than they would have had. There are also some compatibility problems associated with expanded memory support for spreadsheet programs.

Shareware authors have concentrated their efforts on integrity of calculations and improved user interfaces. There are some extraordinary shareware programs that rival the ones you'll see in three page advertisements in leading computer magazines. People used to say back in 1981 that "a spreadsheet is a spreadsheet" -- Bricklin and Frankston can tell you differently. You can find out for yourself by test driving

some of the shareware spreadsheet programs available. I'll help you get started by telling you about a few of my favorites.

VisiCalc is acknowledged by most everyone as the first electronic spreadsheet. It was originally written in Basic for the Apple II computer. SuperCalc was actually around before Lotus 1-2-3. It was originally written for CP/M, and later ported over to DOS. The first DOS spreadsheet wars consisted of SuperCalc, 1-2-3, and VisiCalc, and 1-2-3 was the winner. Later came Multiplan, Twin, VP Planner and Excel. Yes, there were and are a lot of players but the spreadsheet software market is one of the largest. Which explains why there are a number of shareware spreadsheet programs too.

No one is sure which shareware spreadsheet was first. The popular shareware spreadsheet programs of today have been around for quite some time. Most shareware spreadsheets programs were originally written in either compiled BASIC or Turbo Pascal, and not much has changed in that regard. What has changed is the addition of assembly code in critical areas, the implementation of more efficient algorithms, and better user-interface design.

### Have Commercial Spreadsheets Affected Shareware Spreadsheets?

The development of commercial spreadsheets has not directly affected the way shareware spreadsheets have gone. Consider for example the fact that while the big guys were working on developing bigger, more powerful spreadsheets, the shareware authors were looking at the problem from a different angle. e.g., QubeCalc (3-D Spreadsheet), PC-Calc (Re-configurable size).

In the shareware spreadsheet wars, there has been no clear cut winner, possibly because each sheet offers something different for users. QubeCalc offers true 3 dimensional view. InstaCalc is a TSR. As-Easy-As is very compatible with 1-2-3. PC Calc offers good interaction with the popular PC File database program.

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### TWO GOOD SHAREWARE SPREADSHEETS.

#### QubeCalc – A 3 Dimensional Spreadsheet

QubeCalc was released in mid 1986 after 6 months of development. Version 2, which was the first "popular" version of QubeCalc, was released in February 1987. Version 3, which later won *PC Magazine* Editor's Choice for low cost spreadsheets, was released in January 1988. QubeCalc Version 3.10 is still supported as a shareware product, although FormalSoft has released a commercial 3D spreadsheet called ProQube at \$99 which provides greatly enhanced capabilities.

QubeCalc's main advantage over other spreadsheets is that it is a true 3D spreadsheet. QubeCalc provided this 3D capability 3 years before it was available in Lotus 1-2-3. QubeCalc provides up to 64 pages in each worksheet,

and formulas can reference any cell on any page, providing instant consolidation. In addition, QubeCalc's 3D worksheets can be rotated to view and enter data from different perspectives. This allows a user to view data which is on several different pages together on the same screen.

Registration for the current version of QubeCalc 3.10 is \$69.95. The program is started by simply typing "qubecalc". QubeCalc uses overlays so you'll need the overlays in the current directory when you execute it. You can use the setup program to configure QubeCalc differently such as when you're using floppies.

The top line of the QubeCalc screen is called the status line. The first item on the status line "[A]" tells you which of the six (A...F) faces of the spreadsheet (like the panels on a Rubik's cube). The A1;1: tells you the name of the current cell. The A1 part is just like any other

spreadsheet. The 1: tells you what page you are on. The word **BLANK** indicates the current cell is blank. Cells can be **BLANK**, **TEXT**, **NUMBER**, **FORMULA**, or **ERROR**. The (9) is the width of the cell. The next item displayed is the default directory followed by the file name in use.

The second line displays the contents of the current cell. As you reenter a value for a cell the original value will be displayed in the actual cell while the new value will be displayed on this line.

Moving about the spreadsheet is quick and easy with the arrow keys, home and end. **PAGEUP** and **PAGEDOWN** move from page to page in the 3D worksheet. QubeCalc doesn't use the **TAB** but you can use the **CTRL Left** and **Right** arrows to move one screen at a time (the same convention used by Lotus).

At bottom of the screen QubeCalc displays the function keys. Below this is available **RAM** and calculation mode, **AUTO** or **MANUAL**, and range set for recalculation. QubeCalc like several spreadsheet programs supports selective recalculation. QubeCalc's publisher, **FormalSoft**, has implemented a more advanced minimal recalc in their commercial product, **ProQube**, which curiously doesn't support selective recalculation.

QubeCalc's context sensitive help system consist of nearly 100 pages and is well done. The help system which is similar to hypertext may be all you need to use the program. Spreadsheet users are big on documentation and support though. The shareware edition of QubeCalc's also comes with a 50 page manual which is a bridge to the full documentation, (110 pages) that comes with the registered version. **FormalSoft**'s provides "voice" technical support for all registered users and will also answer basic questions from anyone. The combination of the enhanced documentation, and support are more than enough incentive for users to register the product.

QubeCalc Version 3.10 is available from **FormalSoft** at a registration fee of \$69.95 plus \$5 shipping and handling. **ProCube** is available at \$99. The company also has a simple spreadsheet that operates as a **TSR** pop up program titled

**InstaCalc** at \$49.95. **QubeCalc** and **InstaCalc** are both widely available on BBS everywhere. **FormalSoft**, P.O. Box 1913, Sandy UT 84091; (801)565-0971 voice.

### As-Easy-As – A Clever Name and Clever Program

**AS-EASY-AS** development started in 1985 and the first wide distribution version was released early in 1986. Version 2.08, released late in 1986, implemented pull down menus and was the version that made the program popular. Version 3.00 was released mid-1988 followed by maintenance release 3.01 in June of 1988 - this was the version declared the 'Best Shareware Spreadsheet' by Alfred Glossbrenner in *Computer Shopper Magazine* in January 1989. Version 3.01 and the current version 4.00 have received several awards from computer publications in England.

**As-Easy-As**, published by **Trius, Inc.**, is not only a popular spreadsheet program, it's one of the leading shareware programs available. A few years back, Nick Anis sold some shareware disks to his students and had a tough time convincing the school authorities that **As-Easy-As** was shareware. "Are you trying to tell us that students can get copies of this program for \$3 per disk?" A quick call to **Trius**, the program's publisher saved Nick, (the teacher), from being kept after school. Since then **As-Easy-As**'s features and interface have improved substantially. In fact, disk vendors and shareware articles frequently highlight **As-Easy-As** as an example of quality shareware.

**Trius** distributes an assortment of sample worksheet files with **As-Easy-As** along with a couple of sample add-ins. One will make rudimentary sideways printing possible and the other will allow you to set up your **Laserjet** printer in graphics mode. **Trius** also offers related stand alone products with more horsepower.

You start **As-Easy-As** by typing "as-easy". You should have all the files you need on a 360K floppy or preferably in a single subdirectory on your hard disk. There are also several command line options. You can default most of **As-Easy-As**'s options in the .CFG file but

some must be done on the command line. For instance, /E is needed to force **EGA** mode, /V1 will force **CGA** mode /Q will speed up screen updates (at the possible expense of video snow on older **CGA** systems).

As registration or "beg" screens go **As-Easy-As** has one of the most informative. The opening screen displays information about shareware, **Trius**, and key **As-Easy-As** features. Its a bit crowded but nicely done. There are no death threats if you don't register.

**As-Easy-As** is more like one of today's mega-spreadsheets than a clone of the old **Lotus 1.0** style program. There is a lot of detail in the screen design including use of lines, symbols and colors. Neophytes may find the screen confusing at first but users of **Excel**, **Quattro Pro**, or **Lotus Release 3** will be right at home.

The top line of the main screen of **As-Easy-As** is called the function key area. Besides a template for the function keys there is also a mode indicator. The mode indicator messages include, **READY!**, **CALC**, **WAIT**, **MACRO**, **COMPOSE**, and **ERROR**. There is also a separate message window when errors occur that opens in the middle of the screen.

The **F7** key invokes the word processing mode. This is a useful way to perform word processing/text editing while in the confines of a spreadsheet. Word processing bypasses the columns and treats each row as a line in your document. **AEA**'s word processing mode even supports rugged or right justified word wrap. You can set the right margin by invoking the ruler while in the word processing mode. Built right into **AEA**'s standard commands is a powerful search and replace feature. The **/WTR** (worksheet, text, replace) works like a charm across your entire spreadsheet or from the point of the cursor to the end of the file. There are even options to ignore case, (**U**pper and stop and confirm replacements, (**P**ause).

Lines two and three of **AEA** are the panel area. Line two displays the contents of the current cell along with the formatting options for the cell. Line three echoes any keyboard input during data entry. When you press **ENTER** the

contents of line three are moved into line two as well as into the actual cell. If you press the F2 key, the contents of the current cell are placed on line three for editing purposes. You can back out of this mode and any other by successively pressing the ESC key.

The level of detail given by the program's authors, David A. Schulz and Paris Karahalios, is impressive. For instance, the cursor is carefully placed right where you would expect it to be during all phases of data entry. The cursor starts out in the current cell, when you begin data entry it jumps to line 3, (data entry line), and when you press ENTER it returns to the cell. AEA also has a unique column and row pointer system which helps you quickly identify the current cell. Of course, current cell location is also identified on line 2 of the panel area.

The As-Easy-As pull down menus were designed with much more than just aesthetics in mind. Common sense and practicality went into this portion of the spreadsheet, as in all other portions. Each pulldown menu is divided into two portions. The bottom portion displays the commands available at the current menu level, while the top portion displays a history of how the user arrived to this level (i.e., the commands that led to this level).

Like most spreadsheet programs AEA's main menu can be invoked with the "/" slash key although you might need to press ESC to back out of an operation first. You can choose from 3 locations for the menus: the left, right, or the top portion of the screen. The "." period key is used to toggle the menu from left to right and the shift "?" explanation point will toggle the menu from top of the screen to one of the sides. I like my menus to be on the left (AEA default). Experiment a bit to decide which style you prefer.

The bottom screen line is the AEA status line. Here you will not only find the available RAM (a common spreadsheet feature), but also the percentage free (a not so common feature). The AEA status line also displays the file name of current worksheet, the key status for CAPS, NUMLOCK, INS, and the recalculation mode setting. Recalculation can be set to **MANUAL** or **AUTOMATIC**. AEA does not support selective (DOES support selective recalc

through the **{RECALC Range} Macro, Paris**) recalculation but does support the more advanced intelligent recalculation. During macro execution if you are in the macro step mode, the status line will also display the actual line of the macro being executed. There is also a clock complete with sweeping seconds to remind you when its time for lunch or to give up on balancing your checkbook.

For the most part, AEA will execute Lotus's macros but you may need to use AEA's macro step execution to refine them. You can't use Lotus add-ins but AEA comes with a few and others are about to be released from Trius. You can't compile or protect your macros but you can hide them and make them resistant to nosy users who aren't authorized to view them. Another form of protection offered by AEA macros is you can disable the ESC key during macro execution. Unauthorized users will then only be able to exit a macro sequence by completing it or selecting an exit permitted by the macro author.

The documentation with the shareware version consist of printing the online help files using a Trius developed and supplied formatting and printing program which comes to about 50 pages. Registration is \$50 plus \$5 shipping and handling and includes a 300 page printed, perfect bound manual along with the latest version of the program, 3 months of technical support and a subscription to Trius's quarterly newsletter.

Additional support can be purchased separately. Trius will also answer any basic question to anyone but users are expected to register to receive regular, in depth support. Trius, Inc., 231 Sutton St. Suite 2D-3, North Andover, MA 01845; (508)794-9377 voice; (508)794-0762 BBS.

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## NIFTY 50/ TOP100 CONTEST RESULTS

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In our February issue, we announced the Nifty 50/HOT100 BBS Contest sponsored by Dan Bair's **THE FILE CABINET BBS**, Computer Shopper Magazine, and ourselves. As proposed, the contest would act as a simple beauty contest for bulletin boards. Callers were asked to send a post card naming their favorite BBS or dial **THE FILE CABINET** at (215)678-9334 to vote electronically. The 100 systems receiving the most votes would be listed on the HOT100 list in order of votes received. The NIFTY50 list would be comprised of the top ranked system for each state and the District of Columbia, again according to the number of votes received.

The accompanying two tables of BBS listings, along with our front cover map, contain the results as best as we can determine. This being the first year of the contest, it was not without problems.

First, note that despite the fact that we did agree to co-sponsor the event, Boardwatch Magazine was not provided with a final tally of actual votes. In fact we received no vote counts and cannot certify that any were in fact cast. Dan Bair of File Cabinet received the electronic votes and Curt Phillips, a contributor to Computer Shopper, received the mailed postcards. Mr. Phillips performed the counting and ranking in original form. These two gentlemen specifically declined to reveal the total number of votes cast or the number received per system despite our repeated requests for them to do so.

We explained the voting process as it was at that time explained to us, and we agreed to publish the results and go on record as a co-sponsor of the event.

Essentially, Dan Bair, operator of the File Cabinet BBS, and Curt Phillips would collect and tally all votes received either electronically or by post card. The top 100 systems from across the nation receiving votes would be ranked in order of votes received, while the Nifty 50 would contain the most

popular system in each state, based again on number of votes received. No judging, assessment, or valuation was placed on the relative merits of the boards. A simple beauty contest with a vote tabulation. The systems that could inspire their callers to vote the most, would win the contest.

We should have known it would not go smoothly from just the basic premise of the Nifty 50 portion of the contest. How many systems would you guess would be on a list of BBS titled **Nifty 50**. If you guessed **51**, you're a little odd, but correct-o-mundo. We also list **101** systems in the **HOT 100** occupying **85** discrete positions.

One consequence of editorial decisions is not all of them are good ones. The bad ones tend to be embarrassing and expensive. Well, let's get this *mea culpa* over with. We have erred in judgment in lending our name and resources to this contest.

The Nifty 50 BBS contest devolved into a black comedy, at least a mess if not outright fraud. Initially, THE FILE CABINET planned on holding a BBS popularity contest - and winning it. They even suggested we enter and win as well. Initially we thought they were kidding. When we explained we could not support a BBS contest where any of the tallying officials were also contestants, they did very reluctantly agree to withdraw from eligibility. We agreed to publish the results in our June issue and they in turn agreed to provide a final vote tally by April 25, ten days after the close of the April 15th "contest".

Unfortunately, Curt Phillips, who was entrusted with the final tally, withheld the results until May 18th, nearly a month late, apparently due to some scheduling problems with *Computer Shopper* and a deathly fear that someone might publish it on schedule. Unethical as this may appear, it's was merely an annoying opening note in a symphony of bumbling. We publish BBS numbers every month and despite a clear agreement to provide us with this information in time for our June issue, it will come as no surprise to our long-time readers that we had an issue planned for July anyway. We have sincere aspirations toward one in August.

And we'll probably publish BBS numbers in Boardwatch one way or another pretty much indefinitely.

Midway through the contest, we were informed that Mr. Bair, without our consent or consultation, had decided to drop the **HOT 100** count entirely and post only the Nifty 50(51) results. When we inquired about this, Mr. Bair noted that apparently some gay/lesbian BBS systems had "gotten out the vote" and were scoring "too well". When we pointed out that their original design was to get out the vote in similar fashion for their own system, Bair admitted his real concern was that if too many gay/lesbian oriented BBS scored high on the **HOT100**, it might "give the wrong impression about the BBS community."

We don't claim to know what a right or wrong impression of the BBS community might actually look like, but we do know that if you announce an election and start counting votes, it seems a bit off the mark to then change the rules if the results don't quite come in to suit you. We don't hold an official policy on gay/lesbian BBS, and we didn't think we needed one. I don't personally ponder the matter myself of an evening, and generally sexual politics seem a bit mute with regards to BBS systems. The final result should be the count of the votes, not what impression the election officials wish to convey.

If all 100 BBS were run by gay organizations, then they're all gay - period. I don't have to sleep with any of them to publish the list - or to dial the systems regularly for that matter. We report on the evolution of BBS technology and note with interest what people are doing with it. We do not decree what applications are appropriate nor do we fancy ourselves arbiter of the "image of the BBS community." For what it's worth, there are some excellent systems in operation covering gay/lesbian issues. They will probably be primarily of interest to those who share the lifestyle, but not necessarily. Our readers are generally all "big people" and they can dial or not dial whatever they like. We publish telephone numbers.

We were able to prevail upon them to leave the **HOT 100** intact, or at least as intact as it is, and publish the actual results rather than those that might con-

vey the impression of the BBS community they desired. At least we **THINK** we did.

In any event, we did receive "the final tally" on May 18th, and again on the 25th, and again on the 28th. Unfortunately, all were shotgunned with obvious errors - numerous transpositions, down systems. Several systems were no longer in existence. At least two systems, **EXEC-PC** and **CORE** were on the list twice. **EXEC-PC** was on the **HOT100** twice placing both **39th** and **71st**. While **39** and **71** generally sum to **110** we would assume their total vote tally would place them pretty far up the list. Curiously, the combined votes from **71st** and **39th** only moved them up to position **30...**

The winning system from Hawaii, Computer Station, was listed with the number of a board in Alamogordo New Mexico. Numerous disconnects. One voice answering machine. Bair published a total of five electronic "lists" with various corrections on them at various times. As a result, any particular system on the **HOT 100** can claim any position on the top **100** and have a 1 in 20 chance of being correct.

As a co-sponsor of the popular "election" we asked to examine the actual vote count. Incredibly, Bair declined. As it turns out, we don't know yet if there was actual fraud or if the other sponsors were simply embarrassed regarding the low vote count. According to Bair, "*something over 1000 votes were received allowing us to claim a response of thousands.*" Continued conversations made it clear that divulging the low count of this year's contest might adversely affect participation in next year's contest.

Marshall Dudley, author of the popular DOORWAY shareware product, and his son Sean called to point out several discrepancies in the first electronically published list. For one thing, to publish a list of **100** systems ranked in order of popularity, the minimum requisite votes whereby no ties occur would be **5000** (**100+99+98**, etc.) and that that would be a statistically unlikely situation in itself. Bair implied strongly that the final tally was slightly over **1000** while declining to name an exact total count. When confronted with this, he explained that yes there were numerous

ties. As it turned out, in some cases as many as 17 consecutive listings all actually received the same number of votes. In case of tie, the actual ranking was determined by the DATE the votes were received. If one system received seven votes and the other also seven, the first to receive a vote would be ranked higher. This is ridiculous. Not all systems KNEW about the contest at the same time.

Our proposed solution was simple, publish the exact vote count each system received and let the chips fall where they may. If you had four systems ranking sixth on the list and the next listed system was 10th, so be it. Ties would be clear to all and relative position within five or six tying boards would be inconsequential. After a quick huddle with Phillips, Bair declined to reveal the actual tally noting that publication of the low number of votes received would not be "*in their interest and anyway the Academy Awards don't do it.*" Again, we have no idea what interest they have in it other than that they sponsored what was portrayed as a fairly simple BBS popularity contest. And since our view of TV pretty much revolves around watching the Springbok mate while the Serhengegeti plain dries out in the background, we haven't a clue as to the relevance of the "Academy Awards."

Bair did finally provide us with a list of systems "tying" and their true positions on the list. As a result, our HOT100 actually contains 101 systems occupying positions 1 through 85. Note that there is no differentiation between systems occupying the same position. There were 17 systems in our published version of the HOT100 all ranked 85th for example. They all received precisely the same number of votes according to Bair. We would note that none in the top 19 tied and we count that as both fortunate, and suspicious.

Since even in our position of co-sponsor for this contest, we were officially denied access to the ballots or the vote count, we're forced to declare the "contest" in default of normally accepted accounting practices. We don't know for a fact that ANY votes were cast or counted. Certainly the apparent results were rife with gross inaccuracies. In our unqualified but nonetheless strongly held opinion, the entire process is riddled with self-serving manipulation of a

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## INDEX

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most onerous nature. It is unfortunate that the geographic distances and feeling of anonymity lead some to believe they can act with casual disregard of the normally expected conventions of honesty and trust expected in more face to face direct business dealings. This is a trait most common in novices unfamiliar with the essence of the online community.

That said, and acknowledging fully our own culpability and part in promoting this mess, we are hesitant to throw the baby out with the bath water. None of this is the fault of the many obviously excellent systems that encouraged their callers to submit ballots in the hopes of gaining some deserved exposure. Clearly, it should be safe to say that each system on the list received at least one vote from someone who in good faith went to the trouble to submit a ballot on their behalf. We would note that several of these systems were superb examples of bulletin boards. Others, not so much so.

Further, our actions cannot be ruled by our emotional response to the actions of those we deal with. We promised to publish the results of the contest. Let it not be said that we failed to do so. The actual list promulgated by Bair and Phillips provided only telephone numbers and abbreviated titles - many of them simply incorrect for whatever reason. We've gone to some effort and expense, in our usual pedantic Boardwatch style, to dial each system and garner a bit more usable information for your perusal. Each number has been verified, and we thought it interesting to note, where possible, the number of access lines, total system hard drive storage, operating software, city and state, and sysop name, along with a brief note as to the system's strong points. We were not 100% successful in this, but largely so. Our sincere thanks to Sean Dudley, operator of Data World BBS (615)966-3574 and the elected BBS from the state of Tennessee for his assistance in list error analysis and in dialing through the list to verify our own verification.

There is a couple of other items to note regarding the list that keep the following statistics from being quite scientific. Bair promoted it primarily through the Interlink Network, a network of systems running the popular PCBoard software, and primarily in the Northeast from his system in Wyomissing Pennsylvania. As a result, the contest results list an inordinate number of PCBoard systems beyond their normal distribution in the BBS community and it would appear from the list that Pennsylvania is the heart of the BBS world. We would note that PCBoard is a popular BBS software package and Pennsylvania does have an active BBS community - neither so much so as the list would indicate.

The majority of the systems in the list are in fact connected to the Interlink Network. If you are not familiar with this national conferencing network, it links over 100 topical message areas on hundreds of bulletin boards into one national network with ongoing conversations from callers all over the continent. Many callers use offline mail readers such as QuickMail and EZReader to quickly grab hundreds of messages off a BBS on their favorite topics. They can then read it offline and respond at their leisure without the expense of the long distance call while reading. The next time they call, they not only pick up new messages, but drop off their responses for insertion into the conferences. It might be worth a call to one of these systems just to find out more about Interlink.

Multiline systems are increasingly popular with over half of our HOT 100 list offering multiline service (53 of 101). The list contains systems with as few as a single line or as many as 100. Our list of 101 systems accounted for at least 617 telephone lines an average of 6.1 lines per BBS. Of 101 systems we were able to determine storage capacities of 71 totalling 65,822 MB of data or nearly 66 Gigabytes. This is an average of 927 MB per system. Note that several systems had over 5000 MB (5 Gigabytes) online now and this pulled the average up somewhat while the smaller storage systems were much less likely to advertise their storage capacities. The average BBS on the block is probably well under our 927 MB figure but the days of the 40 MB super system are clearly behind us.

As to BBS software packages data was available on 94 systems with the following breakdown:

SOFTWARE	BOARDS
PCBoard	45
Wildcat	10
TBBS	9
RBBS-PC	7
QuickBBS	3
MajorBBS	3
Remote Access	2
RedRyder	2
Opus	2
dBBS	2
All other titles	1 each

Note that the propensity for multiline operation generally precluded the use of single line systems widely with PCBoard, Wildcat, TBBS, RBBS-PC, Major BBS, and DLX conventionally thought of as offering multiline service.

The concept of a BBS list compiled by popular acclaim is an attractive, if problematical one. We are currently considering a Boardwatch Reader's Choice List containing systems receiving some minimum count of votes from readers interested in seeing their favorite system garner some deserved exposure. This will require a bit of planning, some gifted headwork from our excellent network of technical advisors, and a fair and verifiable means of counting the vote by some reasonably disinterested and trustworthy third party. We have learned over the three year period of publication that our readers are generally technically gifted, intellectually alert individuals who are enormously albeit appropriately distrustful of sloppy technical analysis and overblown marketing hype. One math error in Boardwatch and we hear the thunder of 11,000 calculator keys snapping into action - and appropriately if somewhat humbly so.

Inevitably, our negative position on the Nifty Fifty contest will cost us a few readers and quite likely a few advertisers which we of course regret. On the other hand, we have published Boardwatch for as few as 30 readers and

no advertisers a few early months in 1987 as I recall. We'll do it again if we have to. Stuff happens.

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West Hartford Connecticut since 08/83.  
Sysop: Bruce Lomasky. Using TBBS 2.1M via 24 lines on MS-DOS 80386 with 300+ MB storage. US Robotics HST DS 19,200 bps. Fee: None. Bruce's Bar and Grill has a similar atmosphere to TV's "Cheers". Public, Private, and Over21 Conference Sections. Many regulars stop by and chat each day. Many online games (some multi-user real time) and thousands of IBM files.

**General Information Systems (GenISys) (215)887-6600** Philadelphia, Pa. since 04/89. Sysop: Robert Malerman. Using Galacticomm 5.10 via 15 lines on MS-DOS 80286 computer with 80 MB storage. Supra at 2400 bps. Fee: \$0.36 Hourly. Hot - Exciting - Multi Line Chat service! User registry, Multi Player Games!, Special Interest Groups, and Much Much more! Call today for fast paced action. Starlink node 9581 PC Pursuit node PHILPA GeniSys-When your modem deserves the VERY BEST!

**PC-OHIO PCBOARD (216)381-3320**  
Cleveland, Ohio since 09/85. Sysop: Norm Henke. Using PCBoard 14.5/U via 9 lines on MS-DOS 80386 computer with 1980 MB storage. U.S. Robotics at 9600 bps. Fee: \$30 Annually. The Best BBS in America. Over 20000 ZIP files on-line. Each node a dedicated 286 or 386SX computer. Large Adult file section. ProDoor, ProBank, MegaMail and MarkMail doors. Free access for members of ASP. Call 216-381-2115 for USR HST DS.

**Chicago Syslink TBBS (312)622-4442**  
Chicago, Illinois since 06/81. Sysop: George Matyaszek. Using TBBS 2.1M via 4 lines on MS-DOS 80386 computer with 80 MB storage. Multitech at 2400 bps. Fee: \$20 Annually. Multi-Purpose System Catering To All Pet/Ferret Owners. Online Chat Mode, Games, Magazines, National Echo Conferences, MicroMatch/Find A

Friend, Voted as #1 BBS for IL. & #20 for USA. Call ANYTIME and have some FUN for a change!

**Risky Business TBBS (404)333-8800**  
Atlanta, Georgia since 08/89. Sysop: Joel Goodson. Using TBBS 2.1M via 5 lines on MS-DOS 80386 with 615 MB. Universal Data Systems 2400 bps. Fee: \$25 per six months. Tons of Online Games, Multi-Line Chat, Message Areas and a huge 550-meg CD-ROM Drive FULL of public domain software. Member of NCC Adult BBS Network.

**Amiga Atlanta TBBS (404)351-6056**  
Atlanta Georgia since 04/88. Sysop: Rory Didas. Using TBBS 2.1s via 1 line on MS-DOS 80286 with 80 MB storage. Hayes 2400 bps. Fee: \$25 per six months. Just upgraded to TBBS system. Home of Amiga Atlanta, Inc., the local Amiga Users Group, w/50mb of Amiga S/W. Plans for 2 - 3 lines this yr.

**The INDEX System TBBS (404)951-1540** Atlanta Georgia since 04/84. Sysop: Rodney A. Aloia. Using TBBS 2.1M via 3 lines on MS-DOS 80386 computer with 120 MB storage. Hayes at 9600 bps. Fee: \$None. Largest CoCo BBS in the Southeast, also a SDNet/Works! Member. Home of "Today/TDBS", "The Online Catalog", and other TEBS/TBBS applications. USA Today News. Both Hayes Ultra 9600 and US Robotics HST nodes.

**Data Point! (501)442-8777** Fayetteville, Arkansas since 01/83. Sysop: Gary W Funk. Using TBBS 2.1M[16] via 4 lines on MS-DOS 80286 computer with 260 MB storage. U.S. Robotics at 9600 bps. Fee: \$30 Annually. Data Point has multi-line chatting, on-line publications, and multi-player games. Large library of SDN, SDS, and TDN files. Support for MS-DOS, Commodore, and Amiga. TBBS/TDBS/TIMS and TMail support. NetWork, FidoNet, and UUCP message areas.

**The Livewire BBS (609)866-2551** Mt Laurel, New Jersey since 08/89. Sysop: Richard Paquette. Using PCBoard 14.E/6 via 3 lines on MS-DOS 80286 computer with 400+ MB storage. U.S. Robotics at 14400 bps. Fee: \$ None. Features the LiveStore with 20+ Product Departments for On-Line ordering with Visa/MC. Home of: BBS Caller's Digest, The LiveStore, Discount Magazine Door. Boardwatch, USA Today, Info-Mat, Zip Beep and Business Sense. 80+ Doors, Games, Conferences.

**The Pinnacle (703)471-7111** Reston Virginia since 06/88. Sysop: Bill Kirkpatrick. Using TBBS 2.1M via 4 lines on MS-DOS 80386 computer with 650+ MB storage. US Robotics HST at 9600 bps. Fee: None. Messaging - Fidonet Echoes. Online chat. PC-SIG Public Domain Library on CD-ROM. USA Today News and Infomat. Online Games.

**GLIB - Gay & Lesbian Information Bureau (703)578-GLIB** Washington, DC since 06/86. Sysop: Jon. Using TBBS 32M via 15 lines on MS-DOS 80386 computer with 720 MB storage. U.S. Robotics at 14400 bps. Fee: \$35 Annually. GayWay To Your World. Free to members of gay community groups. GayCom National Network. Computer SIGs, ShareWare, current news, info files, support services. Live real-time chat. PC Pursitable. StarLinkable.

**Micro Message Service (MMS) (919)779-6674** Raleigh, North Carolina since 10/82. Sysop: Michael M. Stroud. Using TBBS 2.1M via 7 lines on MS-DOS 80386 computer with 1400 MB storage. U.S. Robotics at 9600 bps. Fee: \$35 Annually. MMS support IBM PC, Amiga, Macintosh, Atari ST, Apple and other SIGs. Online multi-user games. Largest software collection on east coast with 1.4 Gigabytes of storage.

# HOT 100 BBS LIST

IN ORDER OF NUMBER OF VOTES RECEIVED IN NATIONAL HOT100 BBS CONTEST ENDING APRIL 15 1990

PLACE	TITLE	PHONE	NODES/MB	SOFTWARE	DESCRIPTION	OPERATOR	LOCATION
01	PC-Ohio	216 381-3320	9/2270	PCBoard	Shareware All - USR HST Modems - 5 years	Norm Henke	Cleveland, OH
02	Executive Network	914 667-4567	29/2200	PCBoard	Home of Interlink	Andy Keeves	Mt. Vernon, NY
03	Rusty & Edie's	216 728-0737	33/5000	PCBoard	NFL Football Pool - Tradewars	Russ/Edwina Hardenburgh	Boardman, OH
04	Alaska On Line	907 562-0290	3/120	Wildcat	Modern News Magazine	Luke Reed	Anchorage, AK
05	The 49er BBS	405 360-4391	2/670	Wildcat	Online Games, Tradewars, Star Traders	Ed Simlich	Norman, OK
06	AMCOM	216 526-9480	6/2000	PCBoard	60 File Dirs, Offline Mail	Bill Polissant	Cleveland, OH
07	Sonshine Express BBS	408 946-7362	2/???	TBBS	Family Oriented Christian BBS	Anton Johnson	Fremont, CA
08	Micro Message Service	919 779-6674	7/1400	TBBS	Online News, Radio Mall, dBases	Mike Stroud	Raleigh, NC
09	MAC HACers	213 549-9640	3/230	RedRyder	Mac Support - Hughes Aircraft Comp Club	Bud Grove	San Pedro, CA
10	Pleasure Dome	804 490-5878	4/100	Wildcat	Sexually Explicit Fantasy-Adults	Tom Terrific	Tidewater, VA
11	Strawberry Patch	606 432-0879	2/1000	PCBoard	Vault Breaker Door - LiteLink Network	Terry West	Pikeville, KY
12	Lancaster Area BBS	717 394-1357	5/1600	dBBS	Helpful Information Message Base	Jerry Shenk	Lancaster, PA
13	GLIB	703 578-4542	11/700	TBBS	Gay/Lesbian Issues - 18 or over	CESF.	Arlington, VA
14	HyperInc	215 356-8623	3/300	PCBoard	Est. 1980. Interlink - Offline Mall	Pete Essl	Newton Square, PA
15	Deans Office	201 279-7048	1/340	PCBoard	Business and Education	Frank Relotto	Clifton, NJ
16	Argus Computerized Ex	617 229-2345	48/	MajorBBS	Large Fire Service - Ad Supported	Chris White	Burlington, MA
17	NC Central	919 851-8460	1/515	QuickBBS	NC Clipper User Group	Amnon Nissan	Raleigh, NC
18	Minnesota Spacenet	612 920-5566	1/???	RBBS-PC	MN Space Frontier Society - NASA News	Ben Huset	Minneapolis, MN
19	Shareware South	404 378-7914	5/295	RBBS-PC	General Shareware Downloads	Steve Rohrer	Decatur, GA
20	Chicago SysLink	312 622-4442	4/80	TBBS	Pet/Animal Care - Ferrets	George Matyaszek	Chicago, IL
20	Data World	615 966-3574	5/1600	PCBoard	Over 50 Game Doors - Home of DOORWAY	Sean Dudley	Knoxville, TN
20	The Backroom	718 849-1614	24/327	TBBS	America's Largest Exclusively Gay DB	Artie Kohn	Richmond Hill, NY
23	Channel 1	617 354-8873	32/3700	PCBoard	Superb Shareware Library 220 Conferences	Brian Miller	Cambridge, MA
24	Rock N Roll Party	404 982-0960	1/???	PCBoard	For Professional Broadcasters	Bob ???	Atlanta, GA
25	Invention Factory	212 431-1194	27/2400	PCBoard	100 File Directories - Good Cataloging	Mike Sussell	New York, NY
26	After Five	501 835-5830	1/160	Genesis	Games BM/Amiga/Commodore Support	Bill Clinton	Little Rock, AR
27	HH-Infonet	203 246-3747	6/900	PCBoard	Microsoft Windows - OS/2 Programs	Lee Winsor	New Hartford, CT
28	Microtronics	609 667-0071	9/450	PCBoard	Lottery Players News	Cherry Hill, NJ	Cherry Hill, NJ
29	EXEC-PC BBS	414 789-4210	100/6200	EXEC-PC	Largest Shareware Database In the World	Justin Jackson Jr.	Elm Grove, WI
30	C-Shift Phoenix	319 234-3527	1/100	ForReM	Atari Support	Greg Corey	Waterloo, IA
30	Pro-Tech BBS	205 452-3897	5/570	Wildcat	Adult GIFs/Scanning Services	James Fothermer	Chickasaw, AL
32	Night Shift	501 758-4925	1/1???	PCBoard	Game Doors	Don Hale	North Little Rock, AR
33	Black Knight	708 740-2072	1/1???	Opus	Echomail - Member Parernet	Black Knight	Ingleside, IL
34	New Generation	516 822-7396	1/???	PowerBBS	Home of PowerBBS	Russell E. Frey	Hicksville, NY
35	Eagle's Nest	303 933-0701	1/1212	QuickBBS	Echomail Conferences - Files	Ron Olsen	Denver, CO
36	Studs BBS	415 552-4050	1/1000	Wildcat	For Uncircumsized Gay Men - Explicit	Frank Foreskin	San Francisco, CA
37	Bruce's Bar & Grill	203 236-3761	24/330	TBBS	Popular Social Chat System - News- Games	Bruce Lomasky	West Hartford, CT
37	DataWarp Premium	918 455-5544	2/330	PCBoard	Interlink Conferences/USA Today	Michael Meyer	Broken Arrow, OK
39	Sound of Music	516 536-8723	9/1300	PCBoard	Word Perfect Support - Newsday	Paul Waldinger	Oceanside, NY
40	Data Comp	615 970-7418	4/400	PCBoard	C Programming/International Echoes	Rickie Belliz	Maryville, TN
41	Ask Fred's BBS	216 783-9632	12/6000	PCBoard	MIDI Support - Adult GIF Files	Fred Martin	Boardman, OH
41	Public Data Network	503 484-4622	??/???	???	Computer Magazine Database	Tony Javoric	Grants Pass, OR
41	Windmill Company BBS	806 792-6116	5/???	PCBoard	New Car Price Database	Lee Stafford	Lubbock, TX
41	Noise	419 473-8651	1/320	PCBoard	NW Ohio Info and Software Exchange	Eric Horn	Toledo, OH
41	CORE Systems BBS	215 372-8113	1/600	PCBoard	8 Conf - Online Magazine	Mike Barnhart	Fledding, PA
46	Philly Gamers	215 544-3757	1/185	PCBoard	Over 130 Online Games - 500 Game Dnids.	Patrick Byrne	Springfield, PA
46	Kutztown Connection	215 683-9038	1/220	Remote Acc	Online Games	Darryl Hoffman	Kutztown, PA
46	Friends Too	212 489-0516	1/???	PCBoard	Conversation Oriented	Peter Kronenberg	New York, NY
46	Datacom	212 496-7946	1/135	PCBoard	Stock Market Simulation Games	Alexander Morris	New York, NY

446	Unique & Nifty	...317 866-0725	...2/640	Wildcat	Tim McCormick
51	Sub Sailor's BBS	...912 882-2678	...4/140	Wildcat	Eric Cohen
51	Thunder Road	...718 392-8836	...2740	PCBoard	Tom Vera
51	Wyoming BBS	...307 856-3601	...2/160	PCBoard	Mike Lieberman
51	PC-Library	...612 435-8058	...15/1300	dBBS	Nick Sturk
51	Computer Connections	...202 547-2008	...4/7??	PCBoard	Robert Blacher
56	Golden Springs BBS	...205 238-0012	...1/0/260	PCBoard	Tom Bowerman
56	Backboard BBS	...303 434-5922	...1/446	PCBoard	Zak Speakerman
56	The Geneva Convention	...812 284-1321	...1/7??	Wildcat	Head Pervent
56	Nexus BBS	...215 364-5662	...1/161	QuickBBS	Ross Poppel
56	Greater Boise BBS	...208-322-5227	...2/7??	PCBoard	Michael Quinlan
56	Coastal DOS Users	...207 797-4975	...1/130	PCBoard	Chuck Seyboldt
56	The COM Port	...713 437-0483	...1/40	GTPower	Joel Rennie
56	Rocky Road	...203 791-8838	...1/330	Opus	Gary Snider
56	Silime Board	...404 543-2649	...1/127	PCBoard	Michael Tilt
65	Northern Lights	CLOSED SYSTEM /	...	Phoenix	Home of Karsnedan Software
85	Universe of Karsnedia	...414 764-3244	...1/330	...	Kevin Wozniak
65	TMC BBS	DOWN	/	...	Ben Cunningham
65	Nashville Exchange	...615 383-0727	...8/100	TBBS	48 File Areas/Echomail/Games
65	ARCHIMAGE BBS	...206 493-0401	/	...	...
65	Cyclone BBS	...205 974-5123	...1/220	...	Adult GIF Graphics Files
65	The Harbor	...215 372-2788	...1/270	...	Adult GIF Graphics Files
65	CompuNet	...609 453 1685	...4/1700	PCBoard	Doors, Games, Conferences
65	IBM PC User Group	...404 835-6600	...17???	PCBoard	SW Library/Games \$0.25 per hour
65	The Drawing Board	...818 965-6241	...1/???	RedRyder	IBM PC User Group Support
65	28 Barbary Lane	...206-525-2828	...15/150	DLX	Calligraphy, typography, DTP
76	TOP GUN II	...414 796-8408	...1/???	Remote Acc	Gay/Lesbian Online Chat
76	Full Spectrum	...304 599-6083	/	...	Jeff Thomson/Mona
76	Barbeque Ribbs	...206 676-5787	...2/160	PCBoard	7???
76	Brentwood BBS	...914 835-7898	...4/7??	PCBoard	Rickly & Don Thompson
76	Information Resource	...401 239-8636	...2/145	PCBoard	Michael Huck
76	Microstellar BBS	...201 239-1346	...1/440	PCBoard	Carlo Ayars
76	Windsor Manor	...203 688-4973	...1/???	RBBS-PC	Wyn Easton/IBM
76	EBBBBS	...302 239-0854	...3/330	PCBoard	Char Rice
76	obDored	...619 748-7921	/	Gaming Networks	Jeff Thomson/Mona
85	Programmer's Corner	...301 596-1180	...8/1500	PCConnect	7???
85	Brick City BBS	...314 893-5106	...2/700	...	...
85	WPGS	...619 243-9422	...2??/???	PCBoard	...
85	Nautlius BBS	...316 365-7631	...32/4880	TBBS	...
85	Novus Online Network	...212 721-1206	...2??/???	Major BBS	...
85	Twilight Zone	...215 437-5180	...1/90	BBSX	...
85	LegalEase	...509 326-3238	...2/550	PCBoard	...
85	Page Electronics BBS	...503 365-0171	...2??/356	TBBS	...
85	Underdog	...215 788-6647	...5/500	PCBoard	...
85	Mega System BBS	...702 849-2207	...3/1225	PCBoard	...
85	Ice Rink BBS	...215 437-1640	...1/7???	WWIV	...
85	Dukes Doghouse	...602 468-8206	...1/610	PCBoard	...
85	Mt Olympus	...801 942-0620	...1/???	RBBS-PC	...
85	Schizophenia	...215 944-6269	...1/???	XBBS	...
85	Xsignals	...205 821-8114	...2/500	PCBoard	...
85	Glass Menagerie	...215 376-1819	...1/43	Colorama86	...
85	Computer Station	...808 942-2508	...1/380	Lynx	...

## NIFTY 50 BBS LIST

VOTER'S TOP CHOICE BY STATE IN CONTEST ENDING APRIL 15, 1990

STATE	TITLE	PHONE	NODES/MB	SOFTWARE	DESCRIPTION
AK	Alaska On Line	907 562-0290	.3/120	Wildcat	Luke Reed
AL	Pro-Tech BBS	205 452-3897	.5/570	Wildcat	James Rohmer
AR	After Five	501 835-5830	.1/160	Genesis	Bill Clinton
AZ	Dukes Doghouse	602 458-8206	.1/1610	PCBoard	Duke Renwick
CA	Sonshine Express BBS	408 942-7362	.2/???	TBBS	Anton Johnson
CO	Eagle's Nest	303 933-0701	.1/1212	QuickBBS	Ron Olsen
CT	HH-Infonet	203 246-3747	.6/900	PCBoard	New Hartford, CT
DC	Computer Connections	202 547-2008	.4/???	PCBoard	Sierra Vista, AZ
DE	EBBBS	302 239-0854	.9/330	PCBoard	Fremont, CA
FL	Datacom Supersystem	813 798-5627	.9/380	PCBoard	Denver, CO
GA	Shareware South	404 378-7914	.5/295	RBBS-PC	Wilmington, DE
HI	Computer Station	808 942-2508	.1/380	Lynx	Clearwater, FL
IA	C-Shift Phoenix	319 234-3527	.1/100	FoReM	Decatur, GA
ID	Greater Boise BBS	208-322-5227	.2/???	PCBoard	Honolulu, HI
IL	Chicago Syslink	312 622-4442	.4/80	TBBS	Waterloo, IA
IN	Unique 8, Nitty	317 866-0725	.2/640	Wildcat	Chicago, IL
KS	Nautilus BBS	316 365-7631	.32/44880	TBBS	Crawfordsville, IN
KY	Strawberry Patch	606 432-0879	.2/1000	PCBoard	Bolse, ID
LA	The Dungeon	504 282-5753	.1/	Unknown	Chicago, IL
MA	Argus Computerized Ex	617 229-2345	.48/	MajorBBS	Nautilus Comm. Data Sys.
MD	Programmer's Corner	301 598-1180	.8/1500	PCConnect	Tim McCormick/J. Everman
ME	Coastal DOS Users	207 797-4975	.1/130	PCBoard	Craig Crawford/J.
MI	PC SIG Specialist	616 796-6230	.2/820	RBBS-PC	Waterloo, IA
MN	Minnesota Spacetnet	612 920-5566	.1/7???	RBBS-PC	Nautilus Comm. Data Sys.
MO	Brick City BBS	314 893-5106	.2/700	Wildcat	Terry West
MS	Camelot	606 268-8871	.1/???	PCBoard	Chicago, IL
MT	Hocus Pocus PCBoard	406 765-1451	.3/90	PCBoard	Chicago, IL
NC	Micro Message Service	919 779-6674	.7/1400	TBBS	Chicago, IL
ND	Country Micro RBBS	701 852-8744	.1/420	RBBS-PC	Chicago, IL
NE	Panhandle Connection	308 487-5505	.1/???	Opus	Chicago, IL
NH	Nor'Easter BBS	603 432-6711	.1/350	PCBoard	Chicago, IL
NJ	Deans Office	201 279-7048	.1/340	PCBoard	Chicago, IL
NM	Alamo PC	505 434-4670	.1/???	PCBoard	Chicago, IL
NV	Meta System BBS	702 849-2207	.3/1225	PCBoard	Chicago, IL
NY	Executive Network	914 667-4567	.20/2200	PCBoard	Chicago, IL
OH	PC-Ohio	216 381-3320	.9/2270	PCBoard	Chicago, IL
OK	The 49er BBS	405 360-4391	.2/670	Wildcat	Chicago, IL
OR	Public Data Network	503 484-4622	.???	???	Chicago, IL
PA	Lancaster Area BBS	717 394-1357	.5/1600	dBBS	Chicago, IL
RI	Information Resource	401 539-8636	.2/145	PCBoard	Chicago, IL
SC	The Roost	803 767-4201	.???	RBBS-PC	Chicago, IL
SD	Dakota State BBS	605 256-5195	.1/???	PCBoard	Chicago, IL
TN	Data World	615 966-3574	.5/1600	RBBS-PC	Chicago, IL
TX	Windmill Company BBS	806 792-6116	.5/???	PCBoard	Chicago, IL
UT	Mt Olympus	801 942-0620	.1/???	RBBS-PC	Chicago, IL
VA	Pleasure Dome	804 490-5878	.4/100	Wildcat	Chicago, IL
VT	Black Creek BBS	802 933-2417	.1/???	PCBoard	Chicago, IL
WA	28 Barley Lane	206 525-2828	.15/150	DLX	Chicago, IL
WI	EXEC-PC	414 789-4210	.10/6200	EXEC-PC	Chicago, IL
WV	Full Spectrum	304 599-6083	.1/	PCBoard	Chicago, IL
WY	Wyoming BBS	307 856-3601	.2/160	PCBoard	Chicago, IL

# MICROLINK B

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Telephone (\_\_\_\_\_) \_\_\_\_\_

Name you will use for BBS Logon:

First \_\_\_\_\_ Last \_\_\_\_\_

Password \_\_\_\_\_

# BOARDWATCH MAGAZINE

## NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JULY 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Access LAI	(800)468-8386	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia, CA
ADA Information Clearinghouse	(202)694-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington, D.C.
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	KS
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills, NC
Ashton-Tate Technical Support	(213)324-2188	dBase and Multimatic Support - CIS HOST NAME:ATBBS	Ashton-Tate Corporation	Torrance, CA
AST Technical Services BBS	(714)852-1872	Superb support system for AST Computer Products	AST Research Inc.	Irving, CA
AT&T Support BBS	(201)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield, NJ
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quattré Speakers	Van Nuys, CA
Automobile Consumer Services	(513)624-0552	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati, OH
Baud Town	(818)893-0340	Relaxed, Friendly Social BBS - USA Today/Newsbytes/Boardwatch	Linda Saenz/Fred Gemand	Granada Hills, CA
BBS Press Service	(913)478-9239	Home of INFO-MAT Online Weekly PC News Magazine	Alan Bechtold/BBS Press Service	Topeka, KS
BellSouth's TUG Gateway	(404)594-39864	TransText Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta, GA
Best Friends BBS	(714)832-5902	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley, CA
Big Peach BBS	(404)446-6650	Home of Automen and Treewise Software	Marshall Magee/Magee Enterprises	Norcross, GA
Big Sky Telegraph	(406)683-7880	Education/Econ Development Info to Montana rural Communities	Montana Rural Education Network	Dillon, MT
BMUG BBS	(415)849-2684	Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley, CA
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove, PA
Boston Citinet	(617)439-5699	City of Boston Information Service - Advertising Supported	Advanced Videotext Systems	Boston, MA
Brown Bag Software BBS	(408)371-7654	Power Menu/ PC Outline Software Support	Brown Bag Software	Campbell, CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford, CT
ButtonWare BBS	(206)454-2629	PC-File dB / PC-Calc / PC-Type Software Support	Jim Button/ButtonWare	Bellevue, WA
C.A.R.L Library Service	(303)863-1350	Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver, CO
Canada Remote Systems	(416)232-0442	Probably Canada's largest BBS/Online Information Service	Jud Newell	Toronto, Ontario
CathHouse BBS	206/2901	Modemline Support System for Wildcat BBS Software	Mustang Software	Bakersfield, CA
Cathouse II SuperSystem	(513)528-0505	TV Satellite Dish Info - Videocorder/Decoder Info	Seed City Engineering	Cincinnati, OH
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Neivins Frankel	Suitland, MD
Census Bureau Personnel Division	(301)763-4574	Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Neivins Frankel	Suitland, MD
Channel 1	(617)354-8873	Thirty-line PCBoard System - 2.5 Gigabytes	Brian Miller/Tess Heder	Cambridge, MA
Chicago SysLink	(312)622-4442	Special Interest Areas for Ferri/Pet Owners. TRS80/Aviation	George Matyaszek	Chicago, IL
Classi Computer Fleds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indianapolis, IN
Clear Air BBS	(408)298-4277	Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose, CA
Cleveland Freenet	(216)368-3888	Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland, OH
COCONET	(619)456-0815	San Diego Movies/Plays/Theatres Online - Requias' Software	Brian and Patricia Dear	La Jolla, CA
Computer Business Services	(714)396-0014	Computer Columnist, John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar, CA
Computerized Bulletin Board Sys	(708)849-1132	First Electronic Bulletin Board - Creator of XMODEM Protocol	Ward Christensen	Chicago, IL
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale, Ontario
CrossTalk Communications BBS	(404)641-1803	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell, GA
CTC IEEE Employment Database	(508)263-3857	Online Database of 20,000 Resumes for Engineering	Career Technologies Corporation	Andover, MA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - Echomail - Games	Pete White	Holliston, MA
Dante Project BBS	(603)643-6310	Commentary/Research on Dante's Divinal Comedia	Dartmouth College	Hanover, NH
DataLink RBBS System	(501)442-8777	Online Publications - Excellent TBBS System	Gary Funk	Fayetteville, AR
Dr. Dobbs Listing Service	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton, TX
Economic Bulletin Board	(603)882-1599	Source Code from Dr. Dobbs' Journal, MIPS, and DBMS Mags.	M&T Publishing/Computer Metrics	Redwood City, CA
Eesti BBS #1	(202)377-0433	Economic Statistics/GNP/CPPI/Employment, Trade Opportunities	US Department of Commerce	Springfield, VA
Energy Info Admin E-Publications	7 0142 422583	First BBS in USSR - Estonian Business Issues	Lembit Pim/Estonian Business Assoc.	Tallinn, Estonia
EXEC-PC	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington, D.C.
Farwest BBS	(414)789-4210	Largest BBS in US - 90 Lines - 70,000 files - 4 Gigabytes	Bob Mahoney	Shorewood, WI
FCC Public Access Link	(604)381-3934	Large Western Canada Galactcomm Into System	Ren L'Ecuyer	Victoria, BC
Federal Job Information Center	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia, MD
FEDEXLINK ALIX	(313)226-4423	Federal Job Opportunity Lists available online	US Office of Personnel Management	Detroit, MI
	(202)287-9656	Info on Federal Libraries -Excerpts Library of Congress News	Federal Library Information Network	Washington, D.C.

File Cabinet BBS	(215)678-9854	10-line PCBoard System. 959 MB-100 Conferences-80,000 files	Dan Bair	Wyomissing, PA
Fishing Link	(608)526-9292	River/Lake Charts/Solunar Tables/Fishing Info/Recips	Jim Pratt	LaCrosse, WI
Fly-Fisher's Forum	(416)463-9090	Information on the Sport of Fly Fishing	Bryan Mair/Skyline Hotel Toronto	Markham, Ontario
FOG City BBS 125/10	(415)863-9617	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco, CA
Forbin Project, The	(319)233-6151	Home of QModem SST Communications Software	John Friel III	Cedar Falls, IA
GAO Bulletin Board	(202)275-1050	Lotus/DBase/Word Perfect User Tips	US General Accounting Office/Sheryl Lee	Washington, D.C.
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Arlington, VA
Greenpeace Environet	(415)861-6503	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Dick Dillman/Greenpeace	
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software	Paul Meiners/P&M Software	Houston, TX
Hay Locator	(317)494-6843	Database of Hay/Straw Suppliers and Buyers	Purdue Univ. Agricultural Computer Net	"Norcross, GA
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Hayes Microcomputer Products	Philadelphia, PA
HerpetNet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Mark Miller	Atlanta, GA
IBM Users Group Support BBS	(404)988-2790	IBM PC User Groups Database - Newsletter Exchange	IBM National Support Center	Millpitas, CA
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Vericom Graphics Products - .GIFFs	Western Digital/Nan Coley	New York, NY
Inbound/Outbound	(212)989-4675	Telephone Sales Publication Online Service	Harry Newton Publications	Hamilton, Ontario
Info-Source Canada	(416)574-1313	Online publications	Eric Feistmantl	Hillsborough, OR
Intel Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286	Intel Corporation PC/EO Division	Bellevue, WA
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis	Don Shepherdson	Arlington, VA
JAG-NET	(202)325-0748	Navy Judge Advocate General's Information Network	US. Dept. of Navy / Chris Buechler	San Jose, CA
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	JDR Microdevices	Roswell, GA
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Alpha Systems Inc./Bill Griffin	Minneapolis, MN
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill/Discount Rate-Economic Data	Federal Reserve Bank of Minneapolis	Glendale, AZ
Lasergems Computer Hotline	(602)867-7258	Mail Order Laser Salvage/Supply - Laser Eavesdropping Device	Meredith Instrument Company	Twin Cities, MN
LUMINA	(612)626-2206	Libraries of Univ of Minnesota Integrated Net Access/E1VT100	University of Minnesota	New York, NY
Maxi-Micro TickerScreen	(212)809-1160	2000 Closing Stock Quotes/Market Research/Order Entry	Max Ule & Company	Washington, D.C.
MCI ONE Consultant Support	(800)873-4227	ANI Developers/Rates/Press Releases/Tech Notes	Ed Bellis/MCI Consultant Liason Program	Anaheim Hills, CA
MEDCOM BBS Club	(415)598-0498	520 MB Downloads - Growing to Become the Best - Boardwatch	MEDCOMM Information Systems	New York, NY
Micro Foundry, The	(919)779-6674	USA Today/BoxOffice Magazine - Large Download Area	Thomas Nelson/Clockwork Software	San Jose, CA
Micro Message Service	(303)972-9600	1 Gigabyte of IBM Software - Multiline - USA Today News	Milke Stroud	Raleigh, NC
Microline B	(206)881-8119	Support for Popular R/Base Relational Data Base System	Gilard Westerberg	Littleton, CO
Microline Technical Support BBS	(607)264-5307	CAD Designs for Tombstones, Monuments, and Memorials	Microline Corporation	Redmond, WA
MusichNet	(301)946-6797	CD Catalog, Music News, Music Files, Top 40 Listings	Jim Faliveno/Monumental Computer App.	Cherry Valley, NY
NANCI BBS	(202)475-1973	Online Catalog of Naval Aviation News Magazine	Mike James - Multimedia Software	Mount Airy, MD
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Naval Aviation News/Cmdr. John Norton	Washington, D.C.
NASA SpaceLink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Naval Regional Data Automation Center	NAS Norfolk, VA
National Agricultural Library	(301)344-8510	US Department of Agriculture	Marshall Space Flight Center	Huntsville, AL
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	US Department of Agriculture	Beltsville, MD
National Inst.Science Technology	(301)948-5717	Micro Elect.Info Exchange - Virus Protection/Security Issues	National Genealogical Society	Arlington, VA
NAVWESEA	(202)433-6639	Headquarters for NPE Newsletters - Desktop Publishing	National Inst. of Science and Technology	Gaithersburg, MD
NIST ACTS	(303)494-4775	Info and Test Programs for NS16550A UART Chips	Ed Aborn	Tampa, FL
NOAA Space Environment Lab	(303)497-5042	Automated Computer Telephone Service - Sync PC to NBS Time	National Semiconductor Corporation	Santa Clara, CA
Nurisim	(301)498-8205	Solar Flare/Geonagnetic Data Online	Dept. of Navy / Bill Walsh	Washington, D.C.
OERI BBS	(800)222-4522	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Boulder, CO
Old Colbrado City Communications	(719)632-4111	Educational Statistics and Data - Performance Stats -	US Department of Education	Laurel, MD
Online Now	(807)345-5822	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs, CO
Online Sports	(716)688-6537	5 CD-ROMS plus 3MB New Software per Week	Gary Walsh/Tom Haavisto	Thunder Bay, Ontario
Online Store DLX	(805)656-0378	Large base of Sports Stats for Pro Gamblers	Terry McCraith	Williamsville, NY
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Ventura, CA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Cragg	Norcross, GA
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Natural/Ecology Issues	Fran and Norm Saunders	Pooraka South Australia
PacComm BBS	(873)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Colesville, MD
PC Pursuit Information	(800)835-3001	Unlimited LD Calls to 34 US Cities - \$25 Flat Monthly Rate	Telenet Communications	Tampa, FL
PDSL BBS	(516)938-6722	Home of THELIST - Listing of 3000 Nationwide BBS Systems	Jim Toro	Reston, VA
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ. of Mass. Dept. of Physics/Astronomy	Hicksville, NY
PKWare BBS	(414)352-7176	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Amherst, MA
				Glendale, WI

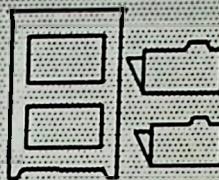
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## NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JULY 1990

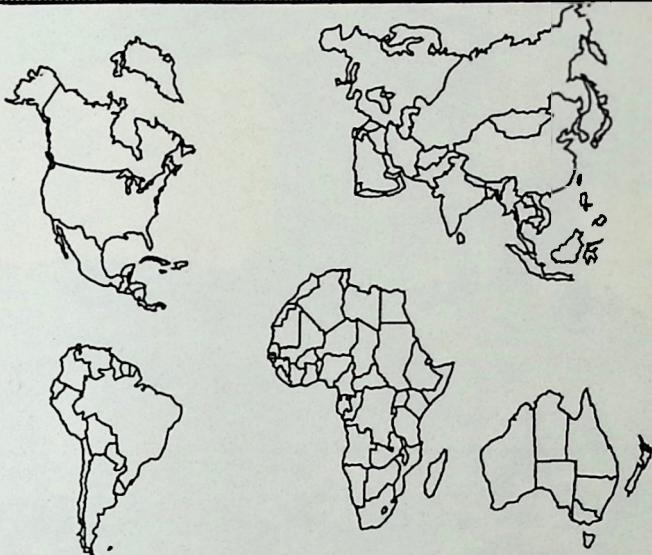
SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Popular Mechanics Online BBS	(212)582-8369	Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York, NY
ProComm Support BBS	(314)474-8477	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia, MO
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis, IN
Publifers Information Svce.	(312)342-6919	Xerox Ventura Publisher Support/Laser Printing/Scanning	George Weiners	Chicago, IL
Radio Electronics BBS	(516)293-2283	Radio Electronics Magazine Online Adjunct	Gemsback Publications	Farmingdale, NY
Random Access Information Svc.	(503)761-8100	10500 IBM/MAC/AMIGA Files - 3000 MaxPic Graphics	Janice Stevens	Portland, OR
RGB Computing	(519)824-3997	Multiline Information Service/PC Sales/Large File Selection.	Ronald Spencer - RGB Computing	Guelph, Ontario
Rose Media	(416)733-2780	Excellent Canadian PC Board System/Publications/Conferences	Vic Kass	Willowdale, Ontario
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray, UT
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington, D.C.
Scooters Scientific Exchange	(215)657-5586	BioTechnology/Chemistry/Physics/Astronomy/Space Sciences	Brian Moldover	Willow Grove, PA
SEAboard	(201)473-1991	Support system for ARC, SEADOG, and AXE Software.	System Enhancement Associates	Wayne, NJ
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models	Seagate/Shelley Tsch	Scotts Valley, CA
Sistema Profesional Informacion	(525) 590-5988	Largest BBS In Mexico - Spanish Language TBBS	Tecnologia Uno Cero S.A. de C.V.	Mexico City
Society for Technical Comm. BBS	(202)393-3557	STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication	Washington, D.C.
Sound Advice BBS	(816)436-4516	Twenty Line PCboard with 2 Gigabytes Storage - HST Modems	Roy Timberman	Gladstone, MO
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info	Federal Emergency Management Agency	Washington, D.C.
Take 3 BBS	(602)482-1001	Reviews of Movies/Videos/ Film Industry Job Clearinghouse	Dave Kidder	Scottsdale, AZ
Talk Channel	(818)506-0620	DLX-Based Multiline Chat/Talk Service - Sexual Orientation	Gary Clarkson	North Hollywood, CA
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum	Buffalo, NY
Taxonomic Reference File	(215)972-6759	Online Bacterial Name Database - ORACLE Door	BIOSIS Carol Lock/Keith Pittman	Philadelphia, PA
TBBS Net 10/4/23	(303)699-9248	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora, CO
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Onmen Technology Incorp.	Portland, OR
Telix Support BBS	(416)439-8293	Support Service for Telix Communications Software	Collin Sampaleanu/Exis Incorporated	West Hill, Ontario
Texas State Law Library BBS	(512)463-1371	Online Legal Periodicals and Citation Database	Jim Appleby	Austin, TX
The Business BBS	(213)477-0408	Microsoft Windows Support	Joseph Sheppard	Los Angeles, CA
The Ledge PCBoard	(818)352-3620	Home of Textview Door for PCBoard Systems	Richard Paquette	Tujunga, CA
The LiveWire BBS	(609)866-2551	Online Magazine Subscription Orders/BBS Callers Digest	Whole Earth Electronic Link	Mt. Laurel, NJ
The Well	(415)332-7190	Unix Conferencing System - \$8 monthly plus \$3 hourly	Sun Microsystems	Sausalito, CA
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U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems	US Department of Commerce US Naval Observ	Skokie, IL
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @ TCO for Commands	Boardwatch Magazine	Washington, D.C.
USA Today Distribution Service	(303)973-4222	Distribution Service for USA Today/Newsboardwatch	Council on USA/German Democratic Repub.	Littleton, CO
USA/GIDR Databank	(202)529-0140	News from East Germany, Romania, USSR, Czechoslovakia	US Geological Survey Earthquake Info Cnt	Washington, D.C.
USGS Quick Epicenter Determin.	(800)358-2663	Earthquake Epicenter Data - Geomagnetism/E2	US Dept. of Commerce US Naval Observ.	Denver, CO
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	University of Texas at Austin	Washington, D.C.
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries	Veterans Admin - Phoenix Regional Office	Austin, TX
VA Property Listing BBS	(602)640-2371	List of VA held property foreclosures	Richard and Barbara Kenney	Phoenix, AZ
Vacation Florida Database	(407)839-0333	Florida Tourism Information/Database of Campsites/Hotels	Vancouver Board of Education	Orlando, FL
Vancouver ED-NET	(604)734-3282	Educational Online Service	Ward Christensen/Randy Suess	Vancouver, BC
Ward and Randy's CBBS	(312)545-8086	World's First and Oldest Milno-based BBS - Since 2/16/78	Steve Roof/WeatherBrief Data Services	Chicago, IL
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data	Haynes Environmental Systems	Salt Lake City, UT
WeatherStar Pilot Briefing	(612)296-5426	Pilot Data, Weather, Great Circle Route, Airport Information	Western Digital Corporation	Minneapolis, MN
Western Digital Tech Support	(714)756-8176	Hard Drive/Controller Installation and Config Data	Word Perfect Corporation	Orem, UT
Word Perfect Customer Support	(801)225-4444	Word Perfect 4.2/5.0/5.1 Support/Printer Drivers	XyQuest Inc. - Christine Madsen	Bellerica, MA
XyQuest Support BBS	(508)667-5569	Support for XyWrite Word Processor - Custom Keyboard Files	Reginald Hirsch; Attorney	Houston, TX
Ye Olde Bailey	(713)520-1569	Legal Issues Regarding RBOC Relatitions with Info Services	Zenith Data Systems Customer Service	Chicago, IL
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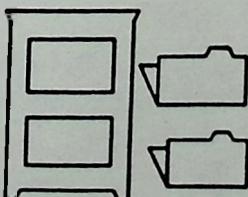
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